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Agriculture is the nursing mother of the Arts.--XENOPHON.

Tillage and pasturage are the two breasts of the State.--SULLY.

63d Year.

Richmond, November, 1902.

No. 11.

Farm Management.

WORK FOR THE MONTH.

The month of October up to this writing (21st) has been one of the finest we have ever known for making progress in the saving of the crops and the preparation and seeding of the land with fall crops. The days have been fine and bright and the nights not too cold. Except in the mountain sections of the western parts of the Southern States there has been no frost to do injury, and even there the frosts have been few and light. As a consequence of this great progress has been made in saving corn and forage crops; all the tobacco crop has been secured without injury, and cotton picking has made rapid progress—much of the area planted in that crop, except in the far South, being safely gathered and now going forward to market. Tobacco is already being marketed freely, and fine prices are being made, even lugsselling for from \$4.00 \$9.00 per hundred. Winter oats have been mostly seeded and some wheat is already sown.

Wheat-sowing should be pushed forward now as fast as the land can be got ready as all danger from injury by the fly is practically past. Whilst we thus urge the completion of the seeding of wheat we would couple this advice with the further advice not to seed until the land is well prepared and a fine surface and well consolidated sub surface is secured. The yield of the wheat crop this year in the South was a poor one, and the general average yield year by year is not by any means what it ought to be. In Virginia, in 1901,

the yield of wheat was only a little over 10 bushels to the acre. This year it will be still less. In North and South Carolina the yield was only a little over 8 bushels to the acre. In Maryland the yield in 1901 was over 17 bushels to the acre, whilst in Kentucky the yield was 12 bushels to the acre. Maryland in 1901 made 13,315,139 bushels of wheat on 774,136 acres of land, whilst Virginia made only 9,680,192 bushels on 888,890 acres. No natural soil or climatic conditions exist to account for so large a difference between the yields in Maryland and Virginia and North and South Carolina. The true cause of the difference we believe to be the much better preparation of the land before seeding the crop in Maryland than is the case in the other three States, and also the fact that lime is much more largely used upon land in Maryland than in Virginia and North and South Carolina. The use of the lime results in a much heavier growth of clover and the other leguminous crops, and these in turn supply the soil with more plant-food, which is made available for the wheat crop by a better system of rotation and more perfect cultivation and preparation of the soil. Wheat is a crop that will forage widely for plant-food, but as pointed out by the late Sir J. B. Lawes, to enable it to do this the land on which it can secure it *must be well prepared* before the seed is sown. A week spent in better fitting one acre of land before seeding will be much more profitably spent than in plowing and fitting an extra acre to be seeded. There is no reason whatever why the average yield of wheat per

acre in Virginia and North and South Carolina should not be doubled and that without the expenditure of one dollar more per acre in fertilizer. Early and better plowing and cultivation of the soil, the growing of clover and cow-peas and the application of a dressing of from 20 to 30 bushels of lime to the acre once in each rotation of crops will effect the object. The truth of this is shown by the wheat crop grown by Mr. Bellwood at Drury's Bluff, Va., this year, particulars of which were published in our July and September issues. He made an average of over 29 bushels to the acre on a 75 acre crop, grown on upland, and this without the use of any fertilizers. There is time yet to improve the condition of the seed-bed and yet not be too late in seeding. A crop of wheat that can be well seen above ground before hard, frosty weather sets in will almost invariably make a better yield than one which is two or three inches high at that time. See to it that after the crop is sown proper provision is made for draining all water away from the field so that it shall not stand on the crop or the soil become water-logged. Wheat cannot grow in water. Lay off plenty of water furrows, and see that all drains and ditches are cleaned out and the mouths kept open.

Rye or rye and English vetch may yet be sown for a winter cover and early spring forage crop. No land should be left bare that can be gotten into seeding order before the end of the month. The winter and spring rains will leach out of bare land large quantities of nitrates which have accumulated under the shade of crops in warm weather and not been utilized by the crops. A growing winter crop will utilize these, and they can then be turned into the soil again in spring, or be made to supply food for stock.

The fine fall days, of which we are having so many this year, ought to be fully utilized in getting home to the barns and under cover all the late crops of hay, millet, sorghum, peas and soy beans as fast as they are fit to store. The farmers of the South are much too careless in attending to these things. They allow crops, which have cost labor and money to raise, to remain in the fields bleaching, weathering and wasting long after they might be safely under cover if given proper attention during the curing, and then in winter and late spring complain of being short of feed and compel stock to live on food containing little or no nourishment. There is no excuse for this in a country where we have such a long and usually fine fall. See that the crops after being cut are given frequent attention and exposed to the sun and wind until sufficiently cured to keep, and then at once put them under cover or into stacks. As fast as the corn is fit to crib, let it be pulled and be hauled to the corn-

house, and have the fodder tied up into bundles and carried home, there to be run through the cutter or shredder and then stored in the barn, or if no cutter or shredder be available, have the fodder stacked up near the barn, so as to be handy for feeding. It will pay any farmer having even only a few acres of corn to buy a shredder and shred his fodder as it comes from the field. In this way he can put a large quantity of fodder into small space, and have it ready for feeding in a shape in which the stock will not waste it. Shredded fodder, when well saved, is almost the equivalent of good timothy hay in nutritive value, and when fed in mixture with clover, cow-pea or soy bean hay will make a ration upon which stock will not only live, but thrive and fatten. Remember that more than one-third—nearly one half—of the nutritive value of the corn crop is found in the fodder and stalks. No farmer has a right to complain that he cannot make farming pay who wastes this value by leaving his corn fodder in the field all winter or fails to utilize it to the best advantage by feeding it in a form in which it will be largely wasted by the stock.

All root crops should be dug or pulled during this month. Ruta bagas may, however, be safely left in the ground until the end of the month. Even a sharp frost will not hurt them, and they will gain more in weight during this month than during any like period in their growth. We wrote fully last month as to the best method of storing and keeping these crops, and to that issue we refer our readers.

Old pasture fields which have begun to fail in growth and productiveness may be renovated and made to do many more years of good service without being plowed if taken in hand now. Let all bushes, stumps and strong weeds and briars be grubbed out. Then take a sharp-toothed drag harrow and harrow the field both ways so as to tear up much of the old grass and loosen the soil about the roots of the grass thoroughly. Then take a horse rake and rake up all the trash harrowed loose and haul the same off into the cattle or hog pen, there to be made into manure. Apply a dressing of 25 or 30 bushels of lime to the acre broadcast. In March sow one bushel of mixed pasture grass seed to the acre, and four or five pounds of mixed clover seed per acre, and harrow lightly. When dry enough, roll. The grasses best to sow are orchard grass, perennial rye, Virginia blue grass, and red top, mixed in equal parts. The clovers should be red, alsike and white. Do not turn stock on until the new seeding has made a good growth, and do not graze too closely in the hot summer months, and the pasture will then take on a new life and be found useful probably for years.

In this issue will be found an article on "The Ma-

nure Heap," to which we invite attention. It deals with a subject which ought to have attention this month. The stock will shortly be brought under cover, and the question of the saving and disposal of the manure made calls for solution. We have endeavored in the article to help in this matter. In the face of the fact that in 1899, according to the census report, the farmers of Virginia spent \$3,681,790, the farmers of North Carolina, \$4,479,030; the farmers of South Carolina, \$4,494,410, and the farmers of Maryland, \$2,618,890, in the purchase of fertilizers, and that in the year now closing they have no doubt spent even more than these enormous sums, it would seem that it would pay Southern farmers to give more attention to the question of saving and utilizing the manure made on their farms, or which might be made and saved there with proper care given the matter.

Keep the teams at work plowing all lands intended to be cropped next year whenever the weather and the land is dry enough. It is a mistake to suppose that because we have not the hard frosts of the North to disintegrate our lands in the winter, that it is therefore time wasted to plow them in the fall and winter. What all our lands need is more frequent and deeper plowing and cultivation. The attempt to grow crops with only one plowing and two or three workings, is proven a failure. Let us amend the system and plow and subsoil in the fall and winter and repeat the work in the spring. Cultivation is much more nearly manure and fertilizer than many are willing to concede. Besides these considerations, we need to plow in the fall and winter to permit of the saving of the rainfall. After the hot weather, the surface of the land becomes so hard and baked that instead of the rain sinking into the soil, it runs off into the nearest creek and river and is largely lost, when the soil needs it badly to meet crop requirements another year. Break, and break deeply, and thus conserve the rainfall. What frost we do have will help to disintegrate the soil when saturated with water. When practically dry, it can do very little in this direction.

See that all barns, stables, sheds and buildings in which cattle or stock of any kind are to be housed are thoroughly cleaned out and lime-washed, and that all roofs, doors and windows are repaired and made good. In the September issue we wrote an article on the making of cement floors for stables and barns, to which we invite attention. We would much like to see these floors put down more generally. They would save much more than their cost in a very short time.

Have the barn-yard fences and gates made good and the yard itself repaired and drained, so that it will not become a mud hole as soon as stock are turned into it.

THE MANURE HEAP.

The barn-yard manure heap has been concisely and accurately described as "the Farmers Savings Bank." The function of a savings bank is to care for and accumulate the small savings of the depositors until these become large enough for permanent investment in land, buildings, or other securities. This description accurately defines the function of the manure heap. It is a place where the daily voidings of the live stock of the farmer are accumulated until they become large enough to be applied with effect on the land for its permanent improvement. Unless so saved and accumulated nearly the whole value of these voidings are lost. When allowed to remain where dropped in the pasture or carelessly thrown out of the buildings in a thin layer in the barnyard, unprotected from the wind, rain and sun, a short time only is needed to dissipate nearly the whole of the manurial value. American farmers as a body, and Southern farmers pre-eminently, are careless of the manurial products of their stock. When charged with this they almost invariably reply that the whole quantity of the manure which they could save, even when ever so careful, would amount to so small a quantity in comparison with their needs of fertilizer that it is not worth while to give greater care to the product. At this season of the year, when the live stock is about to be housed for the winter, we want to impress upon them that this view is a wholly erroneous one and to urge upon them a change in their system and a careful regard for the value of the manure. "A penny saved is a penny gained." A ton of manure saved is money saved which it would otherwise be necessary to expend in the purchase of fertilizer, and this money saving can be secured at practically little cost. It is much easier in most cases to save the money value of a ton of manure than to find the money wherewith to buy the equivalent plant-food value in commercial fertilizer.

As we remarked above, the common reply, when a farmer is charged with neglecting to save the manure, is that the quantity, which at best he can save, is so small that it is not worth the trouble. Let us look into this matter. The manure produced per day by a flock of sheep of 1,000 pounds weight is thirty-four pounds, worth seven cents. Calves weighing 1,000 pounds, sixty-seven pounds, worth six cents. Pigs weighing 1,000 pounds, eighty-three pounds, worth sixteen cents. Cows weighing 1,000 pounds, seventy-four pounds, worth eight cents, and horses weighing 1,000 pounds, forty-eight pounds, worth seven cents. These values are calculated on the market prices of commercial fertilizers. Probably these values are too high because of the fact that the plant-food in animal manure is not so completely and readily available as in high-grade commercial fertilizers, but making liberal allowance

for this and other considerations, Professor Roberts, one of the most reliable and experienced investigators on this subject, estimates that the value of the manure produced on a small farm, carrying four horses, twenty cows, fifty sheep and ten pigs during the seven winter months, amounts to about \$250. Now, how many farmers having such a farm and owning such a number of live stock, expend \$250 per year in commercial fertilizers, and even if they do they will certainly not get as great a return in the long run from the application of this quantity of commercial fertilizer every year as they will from the application of the farm yard manure. The one form of fertilizer supplies to the soil, in addition to the constituents supplied by the commercial fertilizer, humus-making material which the fertilizer absolutely lacks, and upon the humus content of the soil largely depends the crop producing capacity of the soil. It matters not how rich a soil may be in nitrogen and mineral plant food, if it lacks humus it will not produce to its capacity. Good commercial fertilizers, in consequence of the ready availability of the form in which the constituents of plant-food are supplied largely exhaust their effect in the first year of their application. Rarely, if ever, can any result be seen after the third crop. Barn yard manure has been proved to give results continuously for twenty years after it was applied.

Looked at from another point of view, the saving of the manure of the live stock is a matter of great moment to the farmer. Every form of food fed to animals has two values, one the feeding value, consisting of the carbohydrates, protein and fat in the food; the other, the manurial value, consisting of the nitrogen, phosphoric acid and potash in the food. When the animal takes and appropriates the food value it does not exhaust the manurial value. From 75 to 90 per cent. of the latter value is excreted from the animal's body in the dung and urine it voids. The urine is especially rich in nitrogen and potash, the solid dung in phosphoric acid. Not to save both these excreta is wasting from 75 to 90 per cent. of the food given to the animals, and this with no resulting profit from the keeping of the stock. The richer the food fed to the animals the greater the loss in the manure. Cotton-seed meal, flax-seed meal, gluten meal and bran make the richest manure. Clover, peas and the leguminous crops generally the next richest. Corn, oats and the cereal crops the next, and the root crops the poorest. Having thus pointed out how easily it is possible to save a large quantity and value of manure, even where only a small head of stock is kept, let us now see what effect even a small application of this manure can secure. A recent bulletin of the Ohio Experiment Station will very well illustrate this point.

One hundred and fifty tenth-acre plots arranged in five sections of thirty lots each have been cropped with corn, oats and wheat grown in succession, followed by two years in clover and timothy mixed, the cropping

being so planned that each crop is represented each season. The test was begun in 1894, and eight crops each of the cereals and seven hay crops of the first year and six of the second year have now been raised. On plot 18 of this test barn-yard manure is applied to the corn and wheat crops at the rate of eight tons per acre to each crop, and on plot 20 the same kind of manure is used at the rate of four tons per acre on each crop, there being a total application every five years of sixteen tons of manure to plot 18 and eight tons to plot 20. The manure is taken from flat, open yards, where it has accumulated for several months during the fall and winter, and has been subjected to the conditions which affect the ordinary open yard manure of the average farm, conditions which involve very considerable loss. For both corn and wheat, the manure is applied as a top-dressing, and is put on with the manure-spreader. The results of this test are as shown in the following table, which gives the average manured yield for each crop for the period over which the experiment has been conducted, the mean unfertilized yield for the same period of the two plots nearest the manured plot, the average in yield due to the manure, and the value of this increase, counting corn at 33½ cents per bushel, oats at 25 cents, and wheat at 66½ cents, corn stover at \$3.00 per ton, straw at \$2.00, and hay at \$6.66½ per ton :

TABLE I.—INCREASE PER ACRE FROM BARN-YARD MANURE IN FIVE-YEAR ROTATIONS.

CROP AND TREATMENT.	Wooster.			
	Plot 18.		Plot 20.	
	Grain.	Straw or Stover.	Grain.	Straw or Stover.
CORN.				
Manured yield.....	Bushels. 44.25	Pounds. 2,096	Bushels. 40.36	Pounds. 1,922
Unfertilized yield.....	30.76	1,602	31.26	575
Increase.....	13.49	494	9.10	247
Value of increase.....	\$4 50	\$0 74	\$3 03	\$0 52
OATS.				
Manured yield.....	40.05	1,551	34.86	1,337
Unfertilized yield.....	30.56	1,084	29.35	1,089
Increase.....	9.49	467	5.51	248
Value of increase.....	\$2 37	\$0 47	\$1 38	\$0 25
WHEAT.				
Manured yield.....	13.42	1,702	11.62	1,466
Unfertilized yield.....	6.84	742	6.99	756
Increase.....	6.58	960	4.63	710
Value of increase.....	\$4 38	\$0 96	\$3 08	\$0 71
HAY.				
	1st yr. lbs.	2d yr. lbs.	1st yr. lbs.	2d yr. lbs.
Manured yield.....	2,993	3,593	2,474	3,242
Unfertilized yield.....	1,678	2,586	1,657	2,537
Increase.....	1,245	1,007	817	705
Value of increase.....	\$4 15	\$3 36	\$2 72	\$2 35
Total value of increase.....	\$20 93		\$14 14	
Value of increase per ton of manure.....	1 31		1 77	

It will be observed that in every case the value of the increase per ton of manure is greater from the smaller application of manure, although if we count the cost of manure at only that of getting it from the barn-yard to the field, the net profit is much greater from the large application of manure.

Additional light is thrown upon this point by another series of the experiments in which corn, oats and wheat have each been grown continuously on the same land during the same period covered by the rotation experiments just described. In this test plot 5 receives two and a half tons of manure each year and plot 6 receives five tons, the manure, as in the other test, being applied as a top dressing and with the manure-spreader. The average results of the eight crops of each grain harvested are shown in Table II.

TABLE II.—INCREASE PER ACRE FROM BARN-YARD MANURE ON CROP GROWN CONTINUOUSLY.

CROP AND TREATMENT.	Plot 5.		Plot 6.	
	Grain.	Straw or Stover.	Grain.	Straw or Stover.
CORN.				
Manured yield	Bushels. 35.72	Pounds. 1,649	Bushels. 48.33	Pounds. 1,950
Unfertilized yield	25.33	1,307	24.46	1,272
Increase	10.39	342	18.87	678
Value of increase.....	\$3 97	.....	\$7 30	.....
Value of increase per ton of manure.....	1 59	.....	1 46	.....
OATS.				
Manured yield	30.81	1,045	35.86	1,384
Unfertilized yield	26.87	993	25.95	1,017
Increase	3.94	52	8.91	367
Value of increase.....	\$1 04	.....	\$2 60	.....
Value of increase per ton of manure.....	41	.....	52	.....
WHEAT.				
Manured yield.....	12.41	1,392	15.47	1,728
Unfertilized yield	8.43	921	8.43	929
Increase.....	3.98	471	7.04	799
Value of increase.....	\$3 12	.....	\$5 50	.....
Value of increase per ton of manure.....	1 25	.....	1 01	.....

Table II indicates a considerably larger increase from manure, both in quantity and value, in the corn crop than in either of the other crops, while that from oats is much smaller than that from wheat.

Although the separate applications of manure are higher in the continuous than in the rotative cropping, the total weight applied in the course of a five-year period is heavier, as shown by Table III.

TABLE III.—TOTAL WEIGHT OF MANURE APPLIED IN FIVE YEARS, WITH VALUE OF INCREASE PER TON OF MANURE.

EXPERIMENT AND PLOT.	Total weight of manure in five years.	Value of increase per ton of manure.
Rotation, Plot 20.....	8 tons.....	\$1 77
Continuous, Plot 5.....	12½ "	{ 1 59 on corn 41 on oats
Rotation, Plot 18.....	16 "	{ 1 25 on wheat 1 31
Continuous, Plot 6.....	25 "	{ 1 46 on corn 52 on oats 1 10 on wheat

These figures seem to show very clearly that where the supply of manure is scanty it should be spread over as large an area as possible.

Having thus shown the possibility of every farmer saving manure, and the value of that manure as compared with commercial fertilizer and as a crop producer, we want now to say a word as to the best method of saving the manure and as to how its value may be increased. Whilst it is no doubt true that as a general proposition the best way to utilize barn manure is to apply it directly to the land from the barn, thus saving handling and loss from leaching or overheating, yet there are always times and circumstances on every farm when this method cannot be followed. If a farm is all light land, then it is inadvisable to apply manure directly as made. It should be stored and partially rotted before application, if the best results are to be had. On heavy clay land, the quicker the manure is applied after being made the better. Weather conditions, however, and the other work of the farm, may, and often will, prevent the immediate application of the manure to the land; then the question of storage becomes an important one. If merely thrown out into the open yard, as is too often the case, very much of the value of the manure will quickly be lost by leaching and weathering. The best place in which to save manure is a close pit, which will conserve all the liquid leaching from the pile, and into which the urine from all the animals in the barn or stables can be drained. In such a pit, with the manure packed closely and the mass kept moist by urine and the rain only which falls upon it, little loss will be sustained, even if the manure be kept for several months. If no pit is made, then the manure should be stored on impervious clay ground, which should slope from each side towards the centre, thus ensuring the saving of the leaching from the pile. The manure from the different classes of animals should be mixed as brought from the barn and stables. Horse and sheep manure is dry, and heats rapidly. Cow and hog manure is cold and watery. A judicious mixing of these will prevent fire-fanging and loss of ammonia.

Pack closely to exclude the air, and keep the surface level or slightly sloping towards the centre. So place the pile that no drainage from roofs or higher land shall run onto it. The ordinary rainfall of this country will not injure it if only what falls upon the pile is prevented from running away from the heap, and thus carrying off dissolved plant food. Covered barnyards for storing manure are strongly advocated by some authorities, and no doubt possess many advantages; but their success as preservers of the manure, largely depends upon the keeping of the manure sufficiently moist with urine or water to prevent overheating and the compacting of the manure by the treading of live stock.

The value of barnyard manure as a crop producer may be considerably enhanced not merely by care in the handling and storing of it, but by the use of preservatives whilst it is in the barn or stable or in the heap. Of these plaster (gypsum) is the most used, but kainit and acid phosphate are more to be advised, as they both add valuable plant food elements to the manure, and in the case of acid phosphate add that one element in which barn-yard manure is most lacking. Floats (simply ground phosphate rock) is also recommended as being advisable. The Ohio Experiment Station has conducted a series of experiments with a view of determining which of these substances is the more valuable, and from the report of these experiments, which have extended over five years, we take the following notes:

A lot of manure, taken from an open yard, where it had accumulated during the winter from daily cleaning out of the stable behind a herd of dairy cows, which had been liberally fed on bran, gluten meal, corn meal, hay and silage, was divided in the spring into four parcels. On one parcel the finely ground phosphatic rock, from which acid phosphate is made by treating with sulphuric acid, and which, in its untreated condition, is known in the South as "floats," was dusted as the manure was thrown into a pile; on a second parcel, acid phosphate was dusted; on another, the crude potash salt known as kainit, and on another, land plaster, or gypsum, these materials all being used at the uniform rate of 2 pounds per hundred pounds of manure, or 40 pounds per ton. At the same time, a lot of manure was taken from box stalls, where it had accumulated under the feet of animals which were kept continuously in their stalls, being given sufficient bedding to keep them clean without cleaning out the stalls, and similarly treated.

At first, the animals furnishing this manure were bulls, fed on a maintenance ration only; but for two seasons the manure has been made by fattening steers. After a few weeks, the manures thus treated, together with two lots of untreated manure, one taken from the yard and one from the stall, are spread upon the land that is being prepared for corn, the manure being distributed over the surface before plowing, at the uniform rate of 8 tons per acre. The corn crop is followed by wheat, and that by clover or soy beans, the

latter crop having been grown during the first three seasons, owing to the failure of the clover. The soy beans were plowed under. The land under experiment is divided into three sections of twenty plots each, so that each crop is represented each season. Up to the present time there have been harvested in this test five crops of corn, four of wheat, and one of hay.

Each of the materials added to the manure has increased its effectiveness, both total and net. This point is more clearly exhibited by the following statement, showing the value of the net increase for the different applications over and above that given by the untreated manures:

Manure treated with—	Per acre.		Per ton of manure.	
	Yard manure.	Stall manure.	Yard manure.	Stall manure.
Kainit.....	\$3 62	\$1 56	\$0 45	\$0 19
Gypsum.....	3 26	3 13	0 41	0 39
Floats.....	7 70	8 67	0 96	1 08
Acid phosphate....	9 93	9 54	1 24	1 19

These results show that while the prevention of escape of ammonia, which seems to be the only effect that can be ascribed to kainit and gypsum in common, has abundantly justified the use of these materials, yet the additional increase resulting from the use of phosphatic materials has been so large as to demonstrate, beyond all doubt, the superiority of these materials for the purpose in view.

It is probable that floats and acid phosphate are quite as effective conservers of ammonia or kainit, while in addition to this effect they also reinforce the manure in that constituent in which chemical analysis and practical experience show it to be deficient, and thus largely augment its effectiveness.

One of the purposes of this experiment was to study the effect of contact with manure upon the availability of the phosphoric acid in the untreated, pulverized rock; hence the use of floats. This material is converted into acid phosphate by the addition of approximately an equal weight of sulphuric acid, hence the non-acidulated floats contains nearly twice as large a percentage of phosphoric acid as does the acid phosphate made from it. In the untreated rock, however, the phosphoric acid becomes available so slowly as to make some form of treatment, calculated to increase the solubility absolutely essential to its economical use. This experiment shows that the manure is having this effect to a limited degree, and it seems reasonable to expect that if the floats were so used as to remain in contact with the manure for a longer period, as by dusting the floors of the stable with it, or incorporating it at an earlier date in the manure accumulating in the box stalls or barnyard, this effect would be increased.

When corresponding with advertisers, kindly mention the *Southern Planter*.

MANAGEMENT OF LOAM SOILS.

Editor Southern Planter:

If large quantities of strawy manure improve clay soils, it would be a mistake to apply such manure to loam soils. The greater amount of sand these soils contain makes them more open, and therefore the necessity for making these soils as loose and porous as the clay soils not only does not exist, but in dry years may cause serious injury. We must also not overlook the fact that the decomposition of manure, as well as of all vegetable matter, is more hastened in these warm and active soils, and therefore large quantities of manure applied at one time will easily cause lodged grain. A slightly decomposed manure containing a moderate amount of assimilable plant food, on which the plants can immediately commence to feed, will give the best results.

The manure should also be less strawy than that applied on clay soils—richer in plant food—because these soils, especially the lighter loams, are not as rich in plant food as heavier soils. It is also important that the liquid manure which chiefly contains the soluble plant food, the ammonia and potash salts, be retained in the manure, and if leached out, be pumped back over it. In cattle manure, the liquid and solid parts easily become separated, and therefore each barnyard should be provided with a cesspool of comparative large size to receive not only the liquid manure direct from the barn, but also that leached out of the manure until time can be found to return it to the manure.

Of upland soils, with the exception of limestone soils, the loam soils are the best for the growing of all kind of grasses. Our cultivated grasses want a rather loose, clean and well manured soil; yet, one containing sufficient clay to retain moisture and these conditions, are best met with or can more easily be obtained on loam soils. Rye, barley, potatoes, corn and oats, peas and vetches, and all kinds of mixed crops, make fine yields on these soils.

The management of loam soils differs in so far from clay soils, that they contain less plant food, and the assimilable amount due to their greater activity, is easier exhausted. In order to retain their fertility, a comparatively greater amount of plant food must be returned to these than to the clay soils. This can be done by keeping a greater number of well fed live stock, producing rich manure, and it can be done by turning under green crops in conjunction with chemical fertilizer, or probably better by both.

Loam soils, whether laid out in pasture or not, should be at least a year in pasture in rotation. Experience has shown that on farms where large quantities of rich manure are applied, and the soil is deep and thoroughly plowed, the soil becomes too loose, and the excess of nitrogen over the other plant foods found in all rich manures, easily causes lodged grain. This is hard to overcome, even with applications of chemical fertilizer; but very successfully done if the soil is pastured for one year, during which time the mechanical condition of the soil also readjusts itself to a more normal condition, better adapted to the growth of crops which require a settled soil. This refers especially to light loam soils. This is one of the main differences in the management of clay and loam soils.

I would like to cite here two rotations—one for a dry and the other for a moist soil—which have given good results. The rotations show in an excellent way how the manure should be applied to these soils every other year, and how the crops are most successfully rotated.

For a dry soil.

1. Clover and grass.
2. Pasture.
3. *Fallow**.
4. Wheat.
5. Corn.
6. *Peas**.
7. Rye.
8. *Mixed crops, etc**.
9. Oats.

For a moist soil.

1. Clover and grass.
2. Pasture.
3. Pasture.
4. *Fallow**.
5. Wheat.
6. Clover.
7. *Mixed fodder, etc**.
8. Oats.

These rotations are probably not to every body's liking on account of the great number of fields they contain. But the greater variety of crops which can be grown without having two crops in the same field are, as stated before, the best insurance against unfavorable weather, and the soil due to the different kinds of plants with different requirement of plant food, and extracting it from different depth, is less easily exhausted. As the seeding and harvesting of different crops takes places at different times, the pressure of work at one time is not so great, less help is therefore required, and unfavorable weather, which may delay the seeding or harvesting of a crop, if it is very extensively grown, will not have the some bad effect, if some different crops with different seeding and harvesting times are grown on the same area.

On the farm with the nine field rotation both cows and sheep were kept. The sheep were kept until the stubble came in, on some grass spots here and there about the farm not included in the rotation, and also received up to that time additional dry feed and bedding at night. This not only required fodder, but also considerable bedding, and therefore besides the wheat a crop of rye was grown, as the soil was not good enough to produce in the same rotation another profitable crop of wheat. In both rotations the wheat, the most valuable crop, was given, as it always should be, the best place in the rotation. Rye follows the peas, no crop doing better than rye after peas. We also see that the manure, with the exception of that applied to the wheat, is applied to the fodder crops. This should always be the case on soils where large numbers of live stock are kept, as the fodder crops play such an important part in the feeding of the live stock. If necessary, chemical fertilizers may be applied to the grain crops. In this the fertilizing of the leguminous crops differs from the growing of these crops for green measuring, when chemical fertilizers are applied.

The second rotation is much simpler. Of the eight fields two are in pasture, one in clover and one in fallow, leaving four fields for the growing of grain and forage crops. The proportion between the pasture and the winter feed is right. There should always be a surplus of winter feed for all emergencies, and which may be turned to good account at any time.

These rotations, however good they may be, have to be changed somewhat to meet our conditions. In a warm and dry climate like ours fallow cannot be re-

*Manured.

commended, unless the soil has become, through neglect, so extremely weedy that continuous plowing with increasing depth to destroy the shallow as well as the deep-rooted weed is absolutely necessary. A hoed crop can take the place of the fallow. For example :

- | | |
|----------------------|-------------------------------|
| 1. Clover and grass. | 5. Peas* |
| 2. Pasture. | 6. Wheat and rye. |
| 3. Pasture. | 7. <i>Mixed fodder, etc.*</i> |
| 4. Corn*. | 8. Oats. |

*Manured.

- | | |
|----------------------|------------------------------|
| 1. Clover and grass. | 5. Wheat. |
| 2. Pasture. | 6. Corn. |
| 3. Corn*. | 7. <i>Mixed fodder, etc.</i> |
| 4. Peas*. | 8. Rye. |

*Manured.

On a soil in a poor and weedy condition the following rotation may be of advantage :

- | | |
|--|----------------------|
| 1. <i>Fallow, with a catch crop*</i> . | 5. Oats. |
| 2. Wheat and rye. | 6. Clover and grass. |
| 3. Corn. | 7. Pasture. |
| 4. <i>Leguminous crop.*</i> | 8. Pasture. |

Or for 6 fields :

- | | |
|----------------------|-------------------------------|
| 1. Clover and grass. | 4. Corn*. |
| 2. Pasture. | 5. <i>Mixed fodder, etc.*</i> |
| 3. Pasture. | 6. Wheat and rye. |

*Manured.

There is really no end of combinations. The objection I have to a six field rotation on a good soil is, as stated before, that there is too much pasture in proportion to the winter feed if two fields are in pasture, and if the grass is cut the second year, it makes a poor pasture the third year—that is, generally speaking. There are soils, however, where this can be very successfully carried out. The greatest hindrance in changing a six field rotation into an eight field rotation will be the taking down and putting up again of the fences. This may keep many a farmer from doing it, although he may be convinced of the advantages of such a change.

On farms where only cattle are kept, and only one field is sown with leguminous crops, mixed fodder is better than peas or beans because it is better liked by the stock. It is true that a mixture of crops does not generally yield as much seed as a single crop, because there is a slight difference in the time of ripening of the different crops. The fodder is harvested when the seed of the prevailing crop or crops is ripe, and the mixture must therefore always contain immature seed. But mixed fodder is a pretty sure crop, especially on a soil lacking in fertility, for a variety of crops with different requirements on the constituents of the soil, drawing food from different depths, and differently affected by the weather, has better chances of making a good crop than a single crop will have.

More attention should also be paid to the pastures. Travelling through the country, we often see small herds of either cattle or sheep roaming over a large pasture entirely out of proportion to the number of live stock. Bunches of grass grown up here and there and flowering weeds of every size and color, gives the whole a desolate and neglected appearance. This is objectionable in that the seed of these weeds scattered

by strong winds in all directions will infest the adjacent fields ; but the grass allowed to grow up to maturity will extract from the soil an unnecessary amount of plant food, and the stems becoming hollow, will break off and commence to rot, causing the decay of the root stock, and often the dying out of the whole plant. Running a mower over the field whenever necessary will prevent this.

When loam soils are well adapted for grazing, they are equally well adapted for the growing of sugar-beets, and are unexcelled for producing fine brewing barley. In some countries, potatoes are very extensively grown on these soils, producing large crops of starchy potatoes, best suited for manufacturing purposes.

Loam soils have the advantage of possessing, as a rule, good physical conditions ; they require less teams than clay soils, and can be worked at almost any time of the year if the weather is not too unfavorable. If the soil is properly prepared for pasture, the grass imparts to the butter a fine flavor and good keeping qualities. If a variety of crops are grown—cereal, leguminous and root crops alternately—the greater part fed and the mineral matter returned in the manure to the soil, little, if any, fertilizer is needed, and the fertility of the soil will be steadily increased. A neglected or impoverished loam soil, due to the greater activity of these soils, is quicker improved than a clay soil. Whilst loam soils cannot compete in yield with the clay soils, they have the advantage of being easier worked. They are also less affected by unfavorable weather, and the average net profit per acre is little below that of the clay soils, although more intelligent and industrious management is necessary to obtain this result.

District of Columbia.

H. W.

POSSIBLE INJURIOUS EFFECTS OF GREEN MANURE.

Editor Southern Planter :

“Cart the manure from the yard and spread upon the land as soon as possible after it is made, thus preventing destructive fermentation and loss from leaching,” is the advice given again and again in our journals and Station bulletins. The disadvantage of this system is that there are times when it is impossible to go upon the land, as, for example, after heavy rains ; besides, there are farms where the land is so rolling that if the manure was applied in the winter, losses would be likely to occur because of the opportunity for washing into valleys and streams, and finally, there may be no field upon which it can be applied, particularly in the summer season, when crops are growing. However, where conditions justify this method the minimum loss would result, though, as shown by experiments, the availability of the solid portion would be less for the first crop than if the manure had begun to ferment before applying.

Again, all stable manures and the refuse of many farm crops (particularly straw), contain organisms

which cause the liberation of nitrogen in the gaseous form when grown in favorable media containing nitrates. There is, therefore, a constant danger that the conditions of the soil may be favorable to the growth of these denitrifying organisms, and that they will cause a considerable loss of nitrogen by rapidly destroying the nitrates contained therein. These organisms decrease in number and activity when the manure is stored for some time. In view of these facts, it is evident that fresh stable manure and nitrates should never be applied to the soil at the same time.

The farmer should make careful tests in the field. It is a comparatively easy task to manure one portion of a field with fresh manure and another portion with manure which has been stored under definite conditions for a certain time. For this purpose the manure produced by a given set of animals should be collected separately for a convenient period (one week, for example), stored where it can be kept moist, closely packed, and sheltered from the leaching action of the rain. The storing period may vary from one month to one year. When the time for preparing the soil has arrived, the manure should be collected for the same period of time as was the stored manure, and from the same set of animals fed in the same way. The fresh and stored manures should each be applied to equal areas of land of the same kind, and to crops of a like character. The crops should be harvested separately and the relative yields determined.

It is the practice of some farmers to incorporate all the straw possible with manures, in order to facilitate the rotting of the straw, and thus increase the availability of the plant food in it. Considering the objection of inoculating the soil with the denitrifying organisms contained in the straw, the practice of plowing under large quantities of this material in the unrotted state is questionable.

Macon Co., Ala.

GEORGE H. C. WILLIAMS.

PLANT FOOD IN VEGETABLE CROPS.

Editor Southern-Planter :

Plant food means the principles in manure and fertilizers which promote the growth of plants, and for all practical purposes may be considered to refer only to nitrogen, potash, and phosphoric acid. At least, these three substances are about all that is necessary to plant growth that is likely to become so deficient in soils that the growth of crops is checked by their absence. The quantities of these plant elements actually taken up by plants is small as compared with the full bulk of the crop, but they are, nevertheless, necessary; so much so, that without them or any one of them, plants simply fail to make growth. The point

is illustrated by the fact that if a soil contained, for example, enough potash for half a crop, only a half crop at best can be grown. It is well, therefore, to accustom ourselves to regard manures of whatever form, as well as fertilizers and agricultural chemicals, as simply so much nitrogen, potash and phosphoric acid.

Nitrogen is often called "ammonia," probably because the word ammonia means a well-known substance to most people, while nitrogen is an unfamiliar word. Ammonia is, however, a compound of nitrogen and a gas called hydrogen, and the hydrogen is of little or no value in plant growth. As a matter of fact, the nitrogen plant food in manures and fertilizers rarely ever contains any actual ammonia as such, and it is probably better at once to adopt the word nitrogen and become familiar with it. Nitrogen is a gas, and as used as plant food, is generally understood to be combined with a gas called oxygen, forming nitric acid. When this nitric acid is joined to other substances, a product is formed called nitrate, and this is the most useful form of nitrogen plant food. Potash and phosphoric acid are both substances too well known to need a detailed description here.

The actual needs of crops in plant food is somewhat in dispute. As all soils contain more or less of all three of the elements of plant food, manorial applications which were known not to suit the actual needs of the crop, have given good returns. This, because the fertilizer applied made up with what existed in the soil naturally, all the plant food needed by the crop. However, these conditions are unusual, when a gradual falling off in acre yields show that plant food is needed. However rich a soil may be, with continuous cropping the time comes at last when crops begin to fail, and fertilizer applications will restore the crop making power of the soil. It is not easy to say just how much fertilizer should be used, and what kind. The actual needs in plant food of any particular crop is, so far as we now know, best shown by the actual plant food contained in the crop itself. As the crop took up this plant food in order to make its growth, and as nature rarely makes use of anything it does not want, the composition of a crop ought to show just what a similar crop will need in the way of plant food.

It is true that a soil may be deficient only in one or two of the plant food elements; in which case it would seem to be a waste to apply any other plant food than that deficient. However, it is very difficult to draw such fine lines of distinction, especially as the element or elements present, ample this year, may become exhausted a season or two later. A cheese paring policy falls badly on the farm, as in the event of crop failure, the loss in time, etc., is irreparable. In

general practice, it perhaps is cheaper to make the mistake on the safe side, and use plant food liberally, unless it is well known that certain elements are not required as manure.

The following table shows the actual plant food contained per acre, in average crops of various vegetables:

CROP.	Nitrogen.	Potash.	Phos. Acid.
Asparagus	12 lbs.	12 lbs.	4 lbs.
Early Beets.....	43 "	79 "	16 "
Early Cabbage.....	114 "	129 "	23 "
Cauliflower	5 "	15 "	7 "
Cucumbers.....	112 "	168 "	84 "
Lettuce.....	69 "	111 "	21 "
Onions.....	67 "	48 "	19 "
Potatoes.....	30 "	41 "	10 "
Tomatoes.....	11 "	6 "	8 "
Turnips.....	21 "	5 "	8 "

The figures relate only to those portions of the crop which are usually sold off the land—the tops, leaves, etc., not being counted, as they are supposed to go back to the soil as manure of one kind or another. As a matter of fact, it is doubtful if a very great quantity of this roughage, or, rather, the plant food contained in it, is not lost in the operation. At best, it is doubtful if it reached the very land from which it was taken. Consequently, the actual drain of plant food in growing vegetable crops must be much more than the figures in the table show. One very good thing the table brings out is the relation between the different elements of plant food. It shows that for a certain amount of nitrogen, for example, certain other amounts of potash and of phosphoric acid must be used; that is, the proper balance in the plant food.

G. W. WILSON.

ACID PHOSPHATE AND COTTON-SEED MEAL.

Editor Southern Planter:

Throughout the South generally fertilizers are largely compounded of acid phosphate and cotton-seed meal, as these two raw materials for the manufacture of commercial fertilizers are natural to the Southern country. Acid phosphate contains anywhere from 12 to 16 per cent. available phosphoric acid, and cotton seed meal from 5 to 8 per cent. nitrogen, 1 to 2 per cent. potash, and about 2 per cent. phosphoric acid. A mixture of equal weights of acid phosphate and cotton-seed meal, say 1,000 pounds of each, will give a fertilizer of about the following analysis:

Nitrogen, 3 to 4 per cent.

Available phosphoric acid, 6 to 8 per cent.

Potash, not more than 1 per cent.

The weak point in such a mixture is the very small per cent. of potash, and in fact the best grades of fertilizers are "fortified," as it is called, by adding Ger-

man potash salts or other materials containing potash. Most commercial fertilizers, however, are not thus fortified. That this potash is necessary is shown by the composition of the crops generally grown in the South.

For example, cotton at the rate of 300 pounds of lint per acre requires for the whole crop some 50 pounds of nitrogen, 39 pounds of potash, and 12 pounds of phosphoric acid. For every 100 pounds of nitrogen contained in lint cotton, there are also 317 pounds of potash and 26 pounds of phosphoric acid. From this it is pretty clear that potash is a very important ingredient in the plant food for cotton, especially as the lint is the main object of the crop.

Tobacco is another crop grown in the South, and a fair crop per acre demands plant food at the rate of 75 pounds of nitrogen, 200 pounds of potash, and 16 pounds of phosphoric acid. It is evident that in this case again a simple mixture of acid phosphate and cotton-seed meal does not supply the proper quantities of plant food.

One of the chief crops of the South is the cow pea, grown as a manure, a soil cover, or for forage. It is a legume, and consequently if given the proper mineral plant food will draw the necessary nitrogen from the air. The plant must be fertilized, however, in order to assimilate this atmospheric nitrogen, and the analysis shows that the proper proportions of plant-food are 300 pounds of potash to every 100 pounds of phosphoric acid; evidence again that the acid phosphate cotton seed meal mixture is not all that is desired.

It is not our desire to cast any reflections on the use of either cotton-seed meal or acid phosphate as plant food, for, so far as they go, they are excellent. The food of plants consists of three substances—nitrogen, potash and phosphoric acid—and no great excess of any one, or of any two for that matter, can make good a shortage of any one. If the soil has enough nitrogen and phosphoric acid for a full crop, but only enough potash for a half crop, only a half crop or less will be grown. The chain is no stronger than its weakest link. For this reason a simple mixture of cotton seed meal and acid phosphate is unsatisfactory because it supplies only nitrogen and phosphoric acid, leaving potash lacking to a serious extent. H.

The amount of mineral plant food in the soil, and its availability, has a great bearing upon the question of the effectiveness of any application of fertilizers. In many sections of the South, especially east of the Piedmont section, experiments have demonstrated that potash is already in abundant supply in the soil, hence the practice of only applying phosphoric acid and nitrogen.—Ed.

Mention the *Planter* to your friends.

BERMUDA GRASS—JOHNSON GRASS.

Editor Southern Planter:

In your September issue, Mr. J. D. Perkins, Grayson county, Va., asks "When Bermuda grass should be sown." If the gentleman will permit me to answer, I will say, Never! never! never!

However, if he wishes to get a start, I have about ten acres on one of my farms which he may have if he wishes it; and for his trouble I will pay him \$5 per acre to take it away.

My foreman is under strict instructions, should any Bermuda, Brome, or Johnson grass man come on the farm, to escort him to the front gate with the request never to return. I may be mistaken, but this is the way I feel about it. I have personal experience with Bermuda only. This is enough for me.

Remington, Va.

L. M. ALLISON.

There is a story told of the late Lord Palmerston, once Prime Minister of England, that when asked to define "Dirt," he replied that it was "Matter in the wrong place," thus inferring that even dirt had its uses. So we would say with reference to the grasses named. All three—"Brome," "Johnson," and "Bermuda"—have value, and great value, in their proper places, but may become nuisances when out of place. Without Brome grass, many parts in the arid sections of the West would be without hay or pastures; whilst without Bermuda, the hot sections of the South would be without summer grazing, and without Johnson grass, many sections of the South would have but little hay. They all fill a place and meet a felt want somewhere, and all have both strong friends and bitter enemies. We know of no grass that makes so good and reliable a pasture in a hot summer on light lands in a warm climate as Bermuda; but on heavy land, in a cooler section, it may easily become a nuisance. It should never be introduced except upon land that is to be kept in permanent pasture. So with Johnson grass. It should not be seeded except where it is to remain as a permanent hay meadow, and should always be cut before the seed ripens.—ED.

ENQUIRER'S COLUMN.

Enquiries should be sent to the office of *The Southern Planter*, Richmond, Va., not later than the 15th of the month, for replies to appear in the next month's issue of the *Planter*.

Crops for Hogs.

I have four lots on which I expect to run hogs the coming year. I have already seeded one lot to annual clover and oats; one lot seeded to rye, vetch and oats, and two more I will seed later. What shall they be seeded with, and when and how? Should the two lots I have seeded be allowed to come to maturity before turning hogs on, or should it be grazed soon and then take them off and allow the crop to come out and mature and then turn them in. I notice through the col-

umns of "Blooded Stock" a good deal is said against sowing wheat or rape for hogs, and I was afraid to try it. At what stage should the artichokes be turned over to the hogs?

Mecklenburg Co., Va.

A READER.

We would seed one of the remaining lots to Canada peas, wheat, oats and rye in December or January, and the remaining one would plant part in artichokes in April, and the balance in turnips and ruta bagas for winter feeding. The lots seeded in clover, oats and rye, vetch and oats should be turned into as soon as the crops afford a good bite for the hogs, as after these crops become maturely grown hogs do not care for them, and besides they will be needed to supply summer and fall feed. One of the lots should be grazed down and what is left be turned under in April and be planted late in that month with sorghum or part in sorghum and part in corn. The other lot should be turned down in May after the hogs have grazed it well and be planted in cow peas. The Canada pea lot should be turned down in June after the hogs have grazed the crop and be planted also in cow-peas or cow-peas and sorghum, or part in cow-peas and part in sorghum and part in rape in August. These second crops should carry the hogs until the artichokes, turnips, ruta bagas and rape are ready in October or November. We know of no reason why wheat and rape should not be sown for hogs. On the contrary, we do know that rape makes one of the best of hog pastures.—ED.

Strawberry Bed—Rhubarb.

1. I have a strawberry bed of about half acre that has been neglected for two years, and the vines are just matted together—the ground is thoroughly covered and the weeds are as high as one's head all over the patch. Please tell me in the next issue of the *Planter* the best plan to cultivate to get best results.

2. Is rhubarb profitable to grow for market in my section?

3. What do you think of the "Crimson Winter" rhubarb to grow for profit?

Surry Co., N. C.

A SUBSCRIBER.

1. Plow the bed up and plant a new one on a piece of land clear of weeds. It would be useless and unprofitable labor to endeavor to make the existing bed produce a good crop. In this issue will be found an article on planting strawberries. Nearly all large growers now plow up their beds after the second year's bearing. Many only take one crop from them.

2. The demand for early forced rhubarb is growing on the markets, and we do doubt not but that in a few years there will be a large call for it. How far it would be a profitable crop in North Carolina we do not know. The market for it at present is mainly confined to the large cities of the North. We see no reason why it should not be shipped there from North Carolina as it

is not a crop requiring any special care in transportation, and therefore the freight ought not be heavy.

3. The only variety we have ever forced is a Crimson variety, whether the one you refer to or not we can not say. The stalks are easy of production in a dark, warm cellar. The roots of well grown plants should be dug up in the fall as soon as frost has cut them down and be placed closely together on the floor in the cellar with soil filled in amongst them and be kept just moist. In a short time they will commence to throw out the new stalks.—ED.

Wood Ashes—Alfalfa.

I have two or three thousand bushels of ashes burned on the farm. I want to try some on corn and cotton. Please tell me how to use to best advantage. Will it work well in compost with cow-stable manure and good dirt? and what other fertilizer should be used with it, and how many ashes will be safe to use in drill or broad cast? I have only recently moved from the red clay lands to this light sandy soil. I see no Alfalfa here; can it be successfully grown, and what fertilizer would you suggest?

Edgecombe Co., N. C.

EDGECOMBE.

Good ashes are mainly valuable for the potash they contain. In good, hard wood ashes this will run as high as 5 per cent. Lime is the principal other constituent. Both of these elements are valuable on nearly all soil, and the potash especially so on light land. The ashes will no doubt help your corn and cotton, but they should not be composted with stable manure. The best way to use them is to spread them broadcast on the land. They are too caustic to be applied in the drill along with seed of any kind. Acid phosphate and cotton-seed meal should be applied with them if the best results are to be looked for.

There is no reason why alfalfa should not be grown in your State. It requires good loamy soil well drained and soil free from weeds, which are the greatest enemies to securing a good stand. The seed should in the South be sown in August on land which has been specially prepared for the crop by having been plowed deep and cultivated all summer to make it fine and to kill out the weeds as they have germinated. An application of acid phosphate and potash, say, from 300 to 500 pounds to the acre, should be applied broadcast and be worked into the soil before seeding the alfalfa.—ED.

Preserving Eggs.

In response to Mr. Morton Ingalls' query anent using water glass silicate of soda. If he drops the "Rhode Island Agricultural Experiment Station, Kingston, R. I., a postal asking for Part II of 14th Annual Report for 1901," the Director will very likely send him a copy. It contains a report of experiments made in using water glass, lime and salt and other preservatives for keeping eggs. The water glass preserved

eggs were o. k. over one year after putting up, 1 per cent. and 3 per cent. solution used.

Lancaster Co., Va.

HENRY J. KIRK.

Soy Beans and Cow-Peas—Cabbages—Acorns.

1. I am a young farmer, and never had any experience with soy beans and cow-peas. I desire to know if you think they will grow profitably in this part of the State as improvers of land and for hay.

What kind of peas to use, and whether sow broadcast or drilled.

2. What is the cause for cabbage growing better when transplanted than when seed are planted in hills?

3. Is it safe to let brood sows run on acorns when in pig?

Carroll Co., Va.

J. M. MARSHALL.

1. It is doubtful whether cow peas and soy beans will make a good growth in your county except in the valleys. Your elevation is too high. This would especially apply to soy beans, which require a long season for perfecting their growth. There are one or two varieties of the cow-pea which we think might succeed in your valleys where you grow tobacco, such as the Warren and the New Era. You might try these, sown either broadcast or in drill. If wanted to produce seed, they are better sown in drills two feet six inches apart and three or four inches apart in the drill.

2. Cabbage, like many other fibrous rooted plants, always make better growth and head better when transplanted. It is difficult to state a reason for this, but experience has demonstrated its truth.

3. We have not heard of sows in pig suffering from eating acorns.—ED.

Crops in Orchard.

I have an orchard two years old. Will it hurt to put the land in wheat, then in black peas, and fallow in the fall?

Greensville Co., Va.

SUBSCRIBER.

The only crops which should be grown in an orchard are vegetable crops and clover and peas. Whilst it might not seriously injure the trees to grow a crop of wheat for one year, yet if the season were to be a dry one, it would materially check the growth. Our view is that if you want a particular crop, you should grow that crop only on the land. If you want trees, grow trees, and only such other crops as will help the trees by fertilizing the land.—ED.

Fertilizer for Grape Vines.

Please advise the best form of fertilizer for young grape vines, and state how it should be applied. Should they be cultivated, and how? Is pure animal bone good for fruit trees?

Baltimore, Md.

S. D. JONES.

Bone meal and ashes make one of the best fertili-

zers for grape vines. The vineyard should be cultivated just as you would cultivate a crop of corn. Apply the fertilizer broadcast in the spring, and work it into the ground with cultivator or harrow.—ED.

Barley—Grass for Permanent Pasture.

Please tell me something about barley. How would it compare with oats and rye as a crop for grain and forage, and will it grow on thin land as well as rye, and when is the best time to sow it, and how much ought to be sown to the acre? How much rye ought to be sown to the acre? I am thinking of sowing a mixture of Virginia blue grass, Japan clover, orchard grass, and tall meadow oat grass for permanent pasture on land not very highly improved. How do you think it will do?

J. A. DONELSON.

Campbell Co., Va.

Barley requires good, rich loam land to make a profitable crop. It does no good on thin land. It should be sown in the fall—say September or October. One and a half bushels should be sown to the acre. From one to one and a half bushels of rye should be sown. Rye will be likely to succeed much better in your county than barley. The grass mixture you suggest will be likely to meet your needs.—ED.

Grasses for Woodland.

Please discuss fully in the *Planter* how best to secure a permanent all-the-year-round pasture on swamp woodland, unplowed, in Northeast Louisiana, with good surface drainage, on which all small timber and undergrowth have been deadened, leaving large trees, such as oak, sweet-gum, etc., growing, which will partially shade the land.

What grass seed, sown broadcast over such unplowed woodland, will germinate, grow and perpetuate themselves from year to year, and supplant or supercede the rough native grasses? State quantity and proportion, as also the time when the seed should be sown.

Discuss particularly the merits of Bermuda grass, Japan clover, Giant beggar weed, Hairy vetch, etc., for the purpose stated.

J. B. WEST.

Summit, Miss.

The grasses best adapted for growing on land shaded by trees are wood meadow grass, perennial rye grass, hard fescue, Virginia blue grass, Kentucky blue grass, and Japan and white clover. The seed should be sowed in the fall—August, September and October, at the rate of two bushels to the acre. Bermuda grass cannot endure shading, and is not, therefore, suitable. Beggar weed and Hairy vetch are, neither of them, suitable plants for a pasture field. They should be grown on cultivated land and make a green fodder crop, or can be cut for hay. The woodland should be harrowed over as far as possible before seeding the grasses, so as to give them a better chance of germinating. We have very rarely known the seeding of grasses in wood-land without cultivation to be a com-

plete success. The native coarse grasses which are indigenous to the soil are too firmly established to be run out by introduced varieties. Japan clover, however, will generally succeed in holding its own if not too densely shaded, and the blue grasses may gradually establish themselves.—ED.

THE PROBLEM OF SOIL FERTILITY.

PROF. L. A. CLINTON, CONNECTICUT.

Many farmers think that if they could have their soil analyzed that they would know then just what to apply in the way of commercial fertilizers. Soil analysis would show that in the surface 8 inches of soil of every grass field, there are some 3,000 pounds of nitrogen, some 4,000 pounds of phosphoric acid, and anywhere from 12,000 to 15,000 pounds of potash. These amounts are far in excess of what would be needed to produce crops for many years to come, and the information obtained from having the soil analyzed is really very slight, because the analysis does not tell how much of this plant-food is available for the plant's use.

Every farmer must be an experimenter, and every farm an experiment station. The farmer who has not the spirit of investigation, and who cannot learn for himself the treatment best adapted to his soil, will not make a success at farming.

Our experiment stations have conducted fertilizer experiments year after year. They have found that certain fertilizers upon certain soils in certain seasons are best for corn or for oats, or for other farm crops, but these results are of little value to the farmer so far as giving direct information as to the needs of his farm. They point in a general way towards better methods of treatment which will probably prove advantageous. If, as the result of many experiments, it is found that the soil in any portion of the State responds to an application of phosphoric acid, then the farmers living in that section may suppose that phosphoric acid is the element in which their soil is deficient, and that a fertilizer containing phosphoric acid is the one they should apply.

The problem of soil fertility is not one of plant-food alone. We are learning every year that bacteria play far more importance in the production of our crops than we had supposed. Alfalfa does not seem to thrive in Connecticut. Those who have tried it almost invariably report that it does not grow here. The tests made upon our college farm show that it does not thrive. I have recently dug up some plants which were attempting to grow upon the college farm. The roots contained no nodules whatever, while clover which was growing near was abundantly supplied with nodules. This indicates that the specific bacteria required for the growth of alfalfa are not present in our soil. Certainly the plant-food supplied is abundant, the climatic conditions are favorable, and we must look to bacteria if we expect to grow alfalfa successfully in Connecticut.—*American Agriculturist.*

Mention the *Planter* to your friends.

Trucking, Garden and Orchard.

WORK FOR THE MONTH.

Harvesting, storing and shipping all the summer-grown crops should now be completed as fast as possible, as frost may be expected at any time.

As fast as the land is cleared rake up all trash, leaves and weeds and burn the same. This is a much safer way of disposing of this than burying it in the ground or making it into compost. The larva and eggs of insects of all kinds, which are largely to be found in the trash, and the spores of all fungoid diseases which may have affected the crops, are by burning absolutely and certainly destroyed. Disposed of in any other way some of these are sure to escape and make trouble another year.

When the land is cleared it should be plowed deep and a dressing of lime be applied and harrowed in. This will sweeten the soil, which is apt to become soured by the heavy dressings of farm-yard manure and fertilizer which must be used to successfully grow all vegetable crops. Such land as is not required for the growth of cabbages, kale, spinach and lettuce may be seeded with crimson clover, vetch and rye. These will help to conserve fertility and will make some vegetable matter to turn down in the spring.

Where orchards and small bush fruits have had peas sown in them these should be allowed to remain on the ground and a seeding of crimson clover, vetch and rye be thrown over them. Much of this will germinate and grow under the shade of the dead vines and will conserve the fertility accumulated by the peas and add to the quantity of vegetable matter to turn under in the spring.

Cabbages may be set out for the spring crop in all the Tidewater sections of the Southern States. The land cannot be made too rich or be too well prepared for this crop.

Kale, spinach and lettuce crops may be seeded in the same sections, and lettuce plants raised in beds may be set out. These lettuce plants may need to be mulched with straw or pine tags if the winter becomes at all severe, and therefore should not be planted largely unless these means of protection are at hand.

Lettuce plants should be set out in cold frames for winter cutting. Keep the lights off as long as the weather is mild, but look out for frosty nights and cover when threatening. The soil for the frames should

be fine loamy soil, sweet and friable, and rich in vegetable matter, and should have been got ready during the summer and frequently turned.

Asparagus beds should have the tops cut off and the weeds and trash raked off and burnt and be harrowed down and covered deeply with barn yard manure.

The pruning of raspberry, blackberry and grape-vine canes may be done at any time from now on during the winter. The old canes on the raspberry bushes should all be cut out and the new ones thinned out to a reasonable extent and be shortened back. Blackberry canes should be shortened back and the old dead wood be cut out.

Planting of apples, pears and peaches may be begun and be continued until the ground becomes frozen. Break the ground deeply, especially where the trees are to be set out, and make the holes big enough to allow of the roots being spread out. Do not use manure or fertilizer in the holes, but set the trees in the natural soil, using the top soil first to cover the roots and the bottom soil on top. Manure may be used on the surface as a mulch. In this issue will be found a list of fruit trees suitable for planting in Virginia and North Carolina.

THE MANAGEMENT OF RASPBERRIES AND BLACKBERRIES.

A correspondent asks the Maine Experiment Station for information as to the time for pruning and transplanting raspberries and blackberries. In reply the following suggestions were made:

"The ideal treatment for raspberries and blackberries is to pinch them back at intervals during the summer and thus secure strong, sturdy bushes 3½ to 4 feet high, with laterals 1 to 1½ feet long, rather than to practice severe heading back after the plants have become long and 'leggy.' If, however, as is frequently the case even in the best managed gardens, the plants are at this season making vigorous growth which may not mature, they should at once be cut back to the desired height and the canes will harden before cold weather. Many prefer to cut back the bushes in the spring, after the extent of winter-killing is determined. Thinning the canes, which should always be practiced, may be done at any time during the season. In general one-half, or more, of the young canes which appear should be cut out.

"Blackberry and raspberry bushes may be transplanted this fall if the work is done immediately, but better results are usually obtained from spring planting. Currants, on the other hand, have given rather better results from fall setting.
W. M. M."

WINTER PLANTING OF STRAWBERRIES AT THE SOUTH.

Editor Southern Planter :

Anywhere south of the Mason and Dixon line the strawberry may be set at any time during fall, winter or spring, provided the ground is not too wet to walk on or not actually frozen at the time. In many respects winter is the safest of all times to plant. Air and soil are then cool or cold and moist, just the condition that the strawberry revels in. For it is decidedly a cool weather plant, extending its root growth every day during the winter that the ground is not frozen, even though the frost keeps its leaves nipped off as fast as they peer out. The moment that the heaviest frost abates in the spring leaf growth begins, and close on the heels of this come the blooms. Then before most other fruit has well begun to bloom, strawberries are ripe and the average mortal is happy.

Heat and drought are the great foes of the strawberry. The Southern grower avoids harm from these foes at planting time by setting plants in weather as cool or cold as practicable. We plant largely in late fall and in the dead of winter. It is the rarest thing in the world for cold weather to do direct harm to the strawberry plant at the South. The only indirect harm it can do is on wet, stiff soil to heave or lift the crust of the soil up by freezing. This also lifts the plants and leaves the roots exposed to the wind and sun; when the freeze is over the soil subsides to its normal level.

There is no danger of this only on wet, soggy soil which keeps saturated, and is therefore greatly subject to heaving when frozen. Even on this soil planting may be safely done in dead of winter, provided care is taken to step directly on the plant after it is set. This compresses the soil around it, prevents an excess of water from soaking in just at that spot, and greatly decreases the heaving effects of severe cold.

But there is a much better plan than this whenever it is practicable. That is to put about a fork full of coarse manure evenly around and on the plants. This gives the desired protection of the soil around the plants from cold, and the fertilizing properties are leached out and washed in where the roots can at once appropriate them. In fact, this is the best way that stable manure can be applied to the strawberry plant, North or South. The coarse litter, after the fertilizing properties leach out, makes an excellent mulch to keep the berries clear of grit the following spring. If too much manure has fallen on the plant, it will be necessary to remove some of it about time growth begins in spring, and leave it around and between the plants.

If manure cannot be had to mulch the plants set in dead of winter on wet and soggy land, any coarse lit-

ter or straw will answer. Forest leaves do very well, only that they are more liable to be blown off by high winds, and being so much broader, they are more apt to smother the plants. Pine straw is an ideal mulch; than which there is nothing better.

The mulching directions for winter set plants which we have just given, is for the North, or for such soil at the South as is much given to wetness and to heaving in the coldest weather. We plant over one hundred acres every year on ordinary soil without any protection or any precaution except to set the plants properly.

O. W. BLACKNALL.

Kittrel, N. C.

VIRGINIA STATE HORTICULTURAL SOCIETY.

Editor Southern Planter :

Members of the Virginia State Horticultural Society and the public generally are invited to attend the Annual Meeting of the Society which will be held in the Masonic Hall, Lynchburg, on December 2nd and 3rd, the meeting will be called to order by the President of the Society, Hon. Sam'l B. Woods of Charlottesville, at 10 A. M. To all who are interested in horticulture this will be a most instructive meeting, as the Secretary has succeeded in arranging for papers being read and subjects brought up for discussion by some of the foremost horticulturists in the country. The U. S. Department of Agriculture, at Washington, will be represented among the speakers, and leading men of our own State will also take part. Among the number will be members of the Horticultural Staff at Blacksburg, Commissioner of Agriculture Koerner, Prof. H. G. Heiges, late U. S. Pomologist, now Supt. of State Test Farm at Saxe, Va., State Senator S. L. Lupton, Hon. G. E. Murrell, Dr. W. L. McCue. W. H. W. Collingwood of the *Rural New Yorker*, will discuss conditions of the New York fruit market and best methods for handling fruit there. Prof. H. E. Van Demau, whose presence is always welcomed by the members of the Society, will be present throughout the meeting to tell us more of his experiences in practical horticulture. The subject of Packing, Grading and Handling Fruit will be exhaustively discussed by experts in the different classes, such as Apples, Peaches, Berries and Bye-Products. Those of your readers who attended the last meeting of the Society in Richmond will remember with what enthusiasm it was conducted, and the amount of information that was obtained from the discussions, and may be assured we shall not fall behind our record. Arrangements have been made for special rates at the Lynchburg hotels and for travel on the railroads. Following the plan inaugurated at the last meeting, which proved so popular, badges will

again be distributed to all members and invited guests of the Society. A programme of all arrangements for the meeting will shortly be issued to each member and will also be sent to any one else desirous of attending, on application to the Secretary. Among the other matters of interest, the subject of having a creditable Horticultural Exhibit at the St. Louis Exposition will be discussed and its advantages in advertising the State's resources in this line will be urged.

Crozet, Alb. Co., Va.

WALTER WHATELY,
Sec. and Treas.

CROWN GALL ON APPLE TREES.

Editor Southern Planter :

My old apple orchard is affected with the disease described in the last year's annual report of the State Commissioner of Agriculture as "crown gall." I have nursery trees, for this fall's transplanting, growing very near the old orchard. I propose to plant these nursery trees into an orchard about two hundred yards distant from the old orchard, and where apple trees never grew. How shall I manage them in transplanting so as to cure the disease if it already exists, and to prevent its occurrence if it does not exist.

One variety of these apples was grafted with twigs taken from trees that I am quite sure were diseased. Is there any assurance that they can be so treated as to make them healthy trees?

Any information you can give me on this subject will be highly appreciated.

King George Co., Va.

T. T. ARNOLD.

We asked the opinion of the Bureau of Plant Industry (Department of Agriculture) on the foregoing, and the following is the reply received from the Pathologist :

Your letter of October 9th, with letter of Mr. T. T. Arnold, in regard to crown gall of the apple, has been referred to me. We transmit the following reply to your correspondent's questions :

Crown gall has been pretty definitely proved to be contagious by inoculation experiments. The investigations of Prof. Toomey in Arizona, and Dr. Halstead in New Jersey, have both shown this. However, there is very little definitely known as to how the contagion spreads or the manner of infection. The disease is supposed to be caused by a parasitic slime mold, a low form of life which is on the border line between plants and animals.

These molds have been claimed at times by both the botanists and the zoologists. At the present time, however, they are considered to belong to the animal kingdom. The probabilities are very strong that crown gall is spread in the soil, possibly in the case of nursery trees by the cultivator dragging the germs from one tree to another.

There is no particular method of using fungicides or disinfectants of any sort that we can advise you to

use. In view of the fact that so little is known about crown gall, I would suggest that you select from your nursery trees only those which are perfectly healthy, and plant them in the orchard, if possible, avoiding in the cultivation of your orchard the passing of the plows, harrows, cultivators, etc., from the old infected trees to the new young orchard.

Very truly yours,

M. B. WAITE,

*Pathologist in Charge of Investigations of
Diseases of Orchard Fruit.*

Prof. Alwood, in the last report of the State Horticultural Society, says: "Pieces of the gall or earth from them scattered about trees appear to be able to cause the disease, and it spreads from tree to tree in the orchard by infected earth, or portions of gall being taken from one tree to another in the process of cultivation." We would advise the enquirer to be very careful not to set out trees from any land where any infected trees are found, and to be certain that his new orchard ground is itself clear of infected soil.—ED.

PLANTING ONIONS—FIG TREES.

Editor Southern Planter :

Your correspondent, T. E. Person, Wayne county, N. C., page 573, October number, writes you about planting onion seedlings from the seed-bed. He has time to do so yet if he will afford a little straw to protect in case of severe weather.

Some time since (I think last year), you had an enquiry about a "barren fig tree." In that case, your enquirer had evidently a male tree. I note he said it was a "volunteer." I have known a number of such, all tracing their origin to imported dry figs. The early settlers seem to have brought to this country only the female or bearing trees. As the season is now approaching, he can graft.

Beaufort Co., S. C.

'76.

FALL BEARING STRAWBERRY.

I give a few additional facts in regard to the fall-bearing Pan-American strawberry, briefly mentioned in American Agriculturist's report of the New York State Fair recently. I have visited the grounds of the originator several times this fall and each time found the half acre of plants loaded with fruit in all stages of maturity, from the buds just started to the ripe berries. I counted 22 fruit stems on a single one-year-old plant. The plants are propagated chiefly by dividing the crown. The runners, which are not numerous, begin bearing as soon as they take root. Altogether, it is a very wide departure from the usual habits of the strawberry and will be most cordially welcomed by all lovers of strawberries.—D. D. G., Alleghany county, N. Y., in the *American Agriculturist*.

Mention the *Planter* to your friends.

APPLES ABROAD.

Cable from James Adam, Son & Co., Liverpool, October 10, 1902: "The market is active."

CHESTER R. LAWRENCE,
92 State Street, Boston, Mass.

Messrs. Ed. Jacobs & Sons, London, England, cable sales of apples by the steamships Minnehaha and St. Louis, sold by them this day as follows: (Hudson River fruit):

Baldwins, 14s. 6d. to 17s. 9d., principally 15s. to 16s.; Greenings, 11s. to 16s. 6d., principally 14s. to 15s.; Spitz, 14s. 2d. to 18s.; Spvs., 11s. 6d. to 18s.; Kings, 14s. to 18s.; Russets, 15s.; Ben Davis (New Jersey fruit), 14s. 3d. to 17s. 6d.; Delaware Kieffer pears (bad condition), 11s. 6d.; Hudson River Kieffer pears, 16s. to 16s. 6d.

As you see from the above, notwithstanding the large shipments that are going across, London prices are good, and will continue to be good all the season on account of the great shortage in Nova Scotia. The large supplies now going across from Montreal and Boston nearly all go to Liverpool and Glasgow; steamship communication between those towns is better than with London, and in my opinion London will be the best market this season. Prices mentioned above are gross averages, not quotations, with wets, sacks and resales to be taken off.—W. N. White, in the *Country Gentleman*.

PECAN CULTURE.

Editor Southern Planter:

Twenty years ago, when I first became interested in the pecan, there was not a nursery in Georgia from which many trees of this nut could be obtained. Even in Texas and Louisiana, where large quantities of pecans are gathered every year from the trees of native growth, comparatively little attention was given to this nut in the way of cultivation and improvement.

How different now. To persons who have not kept up with the progress in pecan culture during the last twenty years the meeting of the National Nut Grower's Association at Macon, Ga., a short time ago, would have been a revelation.

Enthusiastic, practical and intelligent pecan growers from Georgia, Florida, Alabama, Mississippi, Louisiana and Texas, were present, and their discussions of the various questions that arise in nut growing were highly entertaining to persons who are interested in any line of horticulture.

Nut growing as an industry is likely to be radically advanced through the efforts of this Association, and a few years hence will assume proportions not dreamed of a few years ago.

The great demand for pecan nuts, at paying prices, has given quite an impetus to nut growing in Georgia, so much so that this industry in the Cracker State is

fast becoming one of the most important in the line of horticulture.

At the recent meeting of the nut growers, referred to above, a very interesting address was delivered by Prof. J. B. Hunnicut, the editor of the *Southern Cultivator*. Having given close attention for many years to all questions connected with the farm and the garden, Prof. Hunnicut is well prepared to speak intelligently on the subject of pecan culture. He referred to an instance in which a large pecan tree produced sixty-four dollars' worth of nuts in one season; and to another in which the owner of a half acre pecan grove derived more money from his trees than from his two horse farm. He said: "Did you ever hear of a pecan tree dying? Did you ever see a dead one? I never did. They live for centuries—they ought to be planted as the shade tree of the South. Cease buying bonds, which are a debt on posterity, and plant pecan trees—something that will grow into profit for posterity. Plant fifty trees to the acre, and when they reach maturity they will produce, at a low estimate, \$25 to the tree."

The man who plants a large pecan grove in the United States, almost anywhere south of the fortieth degree of latitude, may rest assured that he is laying the foundation for an enduring fortune.

Hart Co., Ga.

L. W. PEEK.

We cannot endorse the advice to plant pecans almost anywhere south of the fortieth degree of latitude. In a Bulletin issued by the Department of Agriculture and prepared jointly by the Department and the American Pomological Society, pecans are advised only to be planted in Eastern North Carolina, South Carolina and Georgia below 500 feet elevation, and in Florida, Alabama, Mississippi, Louisiana, Arkansas and Texas, and even in these sections not above 500 feet elevation, except in parts of Texas. They are not suitable for planting in any part of Virginia.—ED.

PARAFFIN IN HORTICULTURE.

A new and important use of refined paraffin wax seems to have been discovered by a resident of Ohio, living near Lancaster, who had two trees badly damaged by storm, one being a maple and the other an apple. In each case a large limb was broken down from the trunk, but still attached to it. The limbs were propped up and fastened securely with straps, very much as a broken leg might be fastened with splints, and then melted refined wax poured into and over all the cracks. This "surgical operation" was entirely successful. The paraffin prevented the escape of the sap, kept out the rain and moisture which would have rotted the trees, prevented the depredations of insects, and the limbs seem thus far to be perfectly re-attached to the tree.—*Country Gentleman*.

Mention the *Planter* to your friends.

FRUIT LIST FOR VIRGINIA.*

We take the following list from a Bulletin prepared by Prof. W. B. Alwood, of the State Experiment Station:

Prof. Alwood says: "The varieties of fruits best adapted to the soils of Virginia is next in importance to a study of the soils if not equal thereto. To actually make a critical study of this subject is beyond the possibilities of any one man or dozen men, but personal observation, supplemented by a consensus of the best experience gathered from the State at large, ought to furnish data of importance. It is in this manner we have prepared the

* This list was first prepared for the Virginia State Horticultural Society by a committee of which Prof. W. B. Alwood is chairman, and is here reprinted in revised form.

APPLES.

NAME.	Color.	Quality.	Season.	Use.	Tidewater.	Middle Virginia.	Piedmont.	Valley.	Appalachia.	REMARKS.
SUMMER.										
Early Harvest.....	Y. W.	8	V. E.	K. M. D.	*	*	*	*	*	* Not equal to next on list.
Early Ripen.....	Y.	9	E.	K. M. D.	**	**	**	**	**	* One of the best for culinary use.
Red Astrachan.....	R.	5-6	E.	K. M.	*	*	*	*	*	* Ripens unevenly.
Summer Pearmain.....	R. Ru.	10	M. E.	K. D.	*	*	*	*	*	
Yellow Transparent.....	Y.	7	E.	K. M.	*	*	*	*	*	
AUTUMN.										
Buckingham.....	R. Str.	9	L.	K. M. D.	*	*	*	*	*	* Excellent for culinary purposes.
Fall Pippin.....	Y.	10	M.	K. D.	***	***	***	***	***	* Excellent culinary and dessert.
Grimes (Golden).....	Y.	10	L.	M. D.	***	***	***	***	***	* Mostly a dessert apple.
Malden Blush.....	Y. R.	7-9	E.	K. M. D.	*	*	*	*	*	* Late autumn in lower Va. One of the best for family and market.
Mangum (Fall Cheese).....	Y. R. Str.	7-8	M.	K. M. D.	**	**	**	**	**	* An excellent apple.
Smokehouse.....	Y. R.	8-10	M. L.	K. M. D.	*	*	*	*	*	* Fine dessert and cooking apple.
WINTER.										
Ben Davis.....	Y. R. Str.	4	L.	K. M.	*	*	*	*	*	* Early bearer. Ships well.
Grimes (Golden).....	Y.	10	E.	M. D.	***	***	***	***	***	* Mostly a dessert apple. Early winter, mountain districts.
Stayman Winesap.....	R.	8	L.	M. D.	†	†	†	†	†	* Commercially unknown in East.
Winesap.....	R.	9	L.	K. M. D.	**	**	**	**	**	* Best red variety where soil suits.
Yellow Newtown (Ab. Pippin).....	Y.	10	V. L.	K. M. D.	***	***	***	***	***	* Should be limited to special soils.
York Imperial (J. F. Winter).....	Y. R. Str.	7	L.	K. M. D.	**	**	**	**	**	* A standard shipping variety.

list submitted. The writer has constantly observed the varieties grown in the State, noting the important points brought to light by his own observation and the observation of others. He has also received the direct aid of Messrs. J. B. Watkins, H. E. Van Deman, Chas. L. Wayland, J. H. Lup-ton, M. E. Fulcher, Geo. E. Murrell, J. G. Wertz, and J. W. Porter, in compiling this list. These gentlemen filled out provisional lists, which were compared, and the final list drawn up as it here appears. In this list are included only such fruits as are thought to be the standard old varieties, and a few of the most promising newer sorts.

"There can be no greater mistake made than to plant an ill assorted lot of varieties of fruit. A few well selected kinds is the first essential to such success in commercial fruit culture."

PEACHES.

NAME.	Color.	Quality.	Adhesion.	Color of Flesh.	Season.	Use.	Tidewater.	Middle Virginia.	Piedmont.	Valley.	Appalachia.	REMARKS.
VERY EARLY.												
Alexander.....	W. R.	5-6	S. C.	C. W.	V. E.	M. D.	*	*	*	*	*	
Amsden.....	G. R.	6-7	S. C.	W.	V. E.	D.	**	**	**	**	**	
Sneed.....	G. R.	6-7	S. C.	W.	V. E.	M.	**	**	**	**	**	
EARLY.												
Bishop (Early).....	Y. R.	9-10	F.	W.	E.	M. D.	**	**	**	**	**	* Good commercial peach. One of the best in quality.
Early Crawford.....	G.	8	F.	Y.	E.	M. D.	**	**	**	**	**	
Lee (General).....	W. R.	7-8	C.	G. W.	E.	M.	**	**	**	**	**	
Mountain Rose.....	Y. R.	5-6	F.	W.	E.	M. D.	**	**	**	**	**	
St. John (Yellow).....	Y. R.	5-6	F.	Y.	E.	M. D.	**	**	**	**	**	
MEDIUM.												
Chinese (Cling).....	Y. C.	7-8	C.	R. W.	M.	K. M.	**	**	**	**	**	
Eberita.....	Y. R.	7-8	F.	Y.	M.	K. M.	**	**	**	**	**	
Late Crawford.....	Y. R.	10	F.	Y.	M.	K. M. D.	**	**	**	**	**	
Oldmixon Cling.....	C.	10	C.	W.	M.	K. M.	**	**	**	**	**	
Oldmixon Free.....	C.	8-9	F.	W.	M.	K. M.	**	**	**	**	**	
Stamp.....	Y. R.	5-6	F.	W.	M. to L.	K. M.	**	**	**	**	**	
LATE.												
Blyen (Came).....	G. W.	7	F.	W.	L.	K. M.	**	**	**	**	**	
Heath (Cling).....	W. R.	10	C.	W.	L.	K. M.	**	**	**	**	**	
Salway.....	Y. R.	5-6	F.	Y.	L.	M.	**	**	**	**	**	
Smock.....	Y. R.	5-6	F.	Y.	L.	K. M.	**	**	**	**	**	
VERY LATE.												
Albright (Winter).....	G. W.	7	F.	W.	L.	K. M.	**	**	**	**	**	
Levy (Lee).....	W. R.	10	C.	W.	L.	K. M.	**	**	**	**	**	
Starke.....	Y. R.	5-6	F.	Y.	L.	K. M. D.	**	**	**	**	**	

PEARS.

NAME.	Color.	Quality.	Season.	Use.	Standard or Dwart.	Tidewater.	Middle Virginia.	Piedmont.	Valley.	Appalachia.	REMARKS.
SUMMER.											
Bartlett.....	Y. Ru.	8-9	L. S.	K. M. D.	S.	**	**	**	**	**	Old standard.
Clapp.....	Y. C.	6-7	L. S.	M. D.	S.	**	**	**	**	**	Ros at core.
Elizabeth (<i>Hanning's</i>)	Y. R.	6-7	S.	D.	-D.	**	**	**	**	**	Abundant bearer.
Summer Doyenne.....	Y. Ru.	4-5	E. S.	D.	S.	**	**	**	**	**	Best of very earlies.
Tyson.....	Y. Ru.	8-9	S.	M. D.	S.	**	**	**	**	**	Finest in quality.
AUTUMN.											
Angouleme (<i>Duchess</i>).	Y. Ru.	5-6	A.	M.	D. & S.	**	**	**	**	**	Good cropper.
Bosc.....	Y. Ru.	10	A.	M. D.	S.	**	**	**	**	**	Poor grower—splendid quality.
Kieffer.....	Y. C.	4-5	L. A.	K. M.	S.	**	**	**	**	**	Heavy bearer—quality medium.
Seckel.....	Br. Ru.	10	A.	K. M. D.	D. & S.	**	**	**	**	**	Good quality, family use.
Sheldon.....	Br. Ru.	7-8	A.	M. D.	D. & S.	**	**	**	**	**	Good size and fair quality
WINTER.											
Easter (<i>Beurre</i>).....	Br. Ru.	5-6	W.	M.	S.	...	...	...	...	...	An inferior fruit in this region.
Lawrence.....	Y. Ru.	7-8	W.	M. D.	D. & S.	**	**	**	**	**	Early winter, excellent quality.

PLUMS.

NAME.	Color.	Quality.	Adhesion.	Season.	Use.	Tidewater.	Middle Virginia.	Piedmont.	Valley.	Appalachia.	REMARKS.
*JAPANESE GROUP. (<i>Prunus triflora</i> .)											
Abundance.....	P. R.	6-7	C.	E.	M. D.	**	**	**	**	**	Good bearer, but not hardy.
Barbank.....	P. Y.	4-5	C.	M. L.	M.	**	**	**	**	**	Good bearer; more hardy than Abundance.
Ogon.....	Y.	6-7	F.	E.	K. M. D.	**	**	**	**	**	
Red June.....	R.	4-5	S. C.	V. E.	M.	...	...	...	...	...
Wickson.....	C.	5-6	C.	M.	M.	**	**	**	**	**	
†EUROPEAN GROUP. (<i>Prunus domestica</i> .)											
Bavay (<i>Green Gage</i>).....	G. Y.	10	C.	M.	K. M. D.	...	...	...	...	...	A splendid plum.
Bradshaw.....	P.	4-6	F.	E.	K. M.	**	**	**	**	**	Good for canning.
Genl.....	Bl.	4-6	C.	E.	K. M.	**	**	**	**	**	Good for canning.
Lombard.....	P. R.	4-5	C.	E.	K. M.	**	**	**	**	**	Great bearer—ros badly.
Shropshire (<i>Damson</i>).....	Bl.	4-5	C.	L.	K. M.	**	**	**	**	**	The best damson.
Yellow Egg.....	Y.	10	C.	M.	K. M. D.	**	**	**	**	**	Splendid plum.
NATIVE GROUP. (<i>Prunus sp.</i>)											
Wild Goose.....	P. R.	4-5	C.	E.	K. M. D.	*	*	*	*	*	

* Japanese plums do not rot quite so badly as the best European plums here.
† Most European plums rot badly here.

Very few persons have grown our native plums to such an extent in Virginia as to warrant recommendations. We have a large list at the Station, but not fully tested.

EXPLANATIONS OF SIGNS AND LETTERS USED.

The star (*) is used to commend a variety; when it is desired to highly recommend a variety a double star (**) is used in the column under appropriate sections of the State, or in several or in all sections as may be thought proper. A single star commends a variety less highly, and the dagger (†) indicates that a variety is thought promising or should be tested.

COLOR is indicated by various letters; as A for amber; B, black; Bl, blue; Br, brown; C, crimson, D, dark; G, green; L, light; P, purple; R, red; Ru, russet; Sc, scarlet; Str, striped; W, white; Y, yellow. Combinations of these letters indicate shades of colors.

QUALITY is indicated on a scale of 0-10. The figures set in this column indicate our judgment on this point, 10 being the highest standard.

SEASON is indicated, first by separating the varieties into groups as near as was practicable, then in each group E is used for early; VE, very early; M, medium; L, late, and other combinations which will be readily understood.

USE is indicated by K for kitchen, meaning all culinary uses; M, market, and D, dessert.

Live Stock and Dairy.

PICTURES OF LIVE STOCK.

In our last issue we gave notice that it was our intention to make our January 1903 issue a special one of great interest to live stock owners, and that to aid in so doing we were anxious to receive pictures of some of the best live stock in the South, and asking for same to be sent us for selection and reproduction. We regret to say that very few breeders or owners of fine animals have responded to our request. We would again urge upon them that they have photographs made and sent us at once or we shall be unable to have the plates made in time. This opportunity of bringing their stock to the notice of the farmers of the South ought surely to commend itself to the attention of owners of fine stock. It cannot fail to result in profit to those who avail themselves of it.

THE BEST BREED OF DAIRY COWS FOR THE WASTED LANDS OF THE SOUTH.

Editor Southern Planter:

I am a careful reader of your valuable journal, and much interested in stock raising and dairying because I was born and raised in a country (Switzerland) where stock raising and dairying is in a high state of perfection. I have made Swiss cheese for the last ten years in Ohio and Wisconsin. Now I have come to Virginia and bought a place here. It seems to me that this State of Virginia is going down, and especially this section, in value every year, mainly because the natives of the country do not care for anything better than the old way of farming, and know little or nothing of the value of good bred stock.

I have spoken to everybody I meet, and urged that we get together and improve our stock and go into the dairy business.

I want to ask you, and every reader of the *Southern Planter*, to incite interest in this matter. Which is the best kind of stock for our section and the whole State for dairying, and at the same time for the butcher?

We need a breed here which will be satisfied with the poor old fields, and at the same time do well.

I hope that in the next issue you will discuss this question, so we can talk this matter up, and that many will give their opinions. After that, I will give my opinion and views on the subject. I think this is the only way to bring this country up into the condition it ought to be.

Lunenburg Co., Va.

AUGUST BUERGL.

We have for years been urging upon the farmers of the South that they improve the quality of their live stock of all kinds by breeding to pure bred male animals of the different standard breeds, and we are glad to say with some effect. The heaven as yet has not worked all over the South, but it is beginning to do so. There are few sections where now there are not

at least one or two men showing what can be done with fine bred stock. A few years ago such men could only be found here and there at wide intervals over the whole South. We intend to continue this campaign in behalf of good bred stock of all kinds so long as we edit the *Planter*, and therefore our correspondents may count on our help in every way in our power.

The question of the best breed of cows for dairy and beef purposes (dual purpose cows) for the thin, wasted lands of the South is one difficult of solution. We are personally strongly impressed with the value of the Red Polls for this purpose. We have excellent reports from one or two parties who have tried them. The difficulty with this breed, however, is that they are scarce and difficult to get in numbers sufficient to meet the demand. We have also a good opinion of the Ayrshires, although they are more essentially dairy than dual purpose cows. Still we have seen Ayrshires make fair beef cattle. Where the lands are better and grass more abundant, Shorthorns cannot be beaten for either the dairy or the block, but on a great part of the Southern lands grass is too short and poor for them to do justice to themselves. We shall be glad to have the views of our readers on this subject.

That our correspondent is right as to the necessity for more and better stock in the South, there can be no question. This necessity for stock is even forcing itself upon the attention of the Western farmers on the great wheat plains of Dakota. Mr. Wing, writing in the *Breeder's Gazette* recently, says:

The cow is bringing prosperity to South Dakota. I have been much interested in studying the influence and effect of dairying. At Desmet there is a large co-operative creamery. It is perfectly equipped, and makes probably as good butter as can be found in the United States. This butter is practically all made from native prairie grasses. It is worthy of note that butter made from these grasses will stand up in much higher temperatures than Eastern butter. The flavor is delightful. There was a day when four elevators and a large mill could not handle the wheat brought to Desmet. To day not more than one elevator is operating. Wheat did not bring prosperity, dairying has brought it. Land values have trebled within ten years. Land now is worth from \$25 to \$50 per acre about here. Farther south and east it is worth even higher prices, as much as \$100 being paid for land in one section of the State. This creamery at Desmet paid out to farmers last month nearly \$10 000. In a year it pays about \$90 000, which, distributed in a community, is a great help. It is a sight to see the farmer's teams surrounding the creamery in the morning. Grade Shorthorn cows are principally used, and most of the calves are raised. Of course there is a great deal of grain grown also.

At Desmet I met John Armstrong, a stockman well known all over the Dakotas for his sound sense and progressive ideas. He is an ardent advocate of the dairy, live stock rather than grain farming. He has been here for many years. Concerning his business, he gives me the following:

We keep a strict account with our cows, and as we retired from the farm many years ago we went into the dairy business to see what could be done with up-to-date methods. The results have surprised us, and as the years go by and we get more and better dairy knowledge, we get better results. The cow is a wonderful animal, and we find great pleasure and profit in our study. Science has taught us that dairying is not drudgery, but an art. All feed bought is charged up to the cows, and they are credited with all milk sold and all the young stock and hogs raised on the skim milk. Our principal grain feed is bran and shorts; the milk is sold to the Desmet creamery, and nothing is charged for labor. I keep just sixteen cows, and the following is a statement of the expenditures for the last four years and the receipts:

	1898.	1899.	1890.	1891.
Cash per cow for milk...	\$49 66	\$55 27	\$56 02	\$60 09
Total cash receipts for milk.....	794 76	852 29	900 07	961 52
Cash pork raised on skim milk.....	215 00	175 00	196 00	198 84
Cash received from stock sold.....	427 00	687 00	673 00	611 67
Total gross cash receipts.....	\$1,436 76	\$1,714 29	\$1,769 07	\$1,772 13
Net cash received, feed deducted.....	1,184 76	1,414 29	1,419 57	1,522 15
Total pounds milk per cow.....	6,001	6,342	6,483	7,342
Total pounds butter per cow.....	300	317 5 oz	324	367
Cost butter per pound of feed.....	5½c.	4¾c.	7c.	6c.
Average price 100 pounds milk.....	74c.	84c.	89c.	92c.
Cost feed per 100 pounds.....	26c.	23c.	35c.	30c.
Gross cash receipts per cow.....	\$89 80	\$103 39	\$110 56	\$111 48
Cash receipts per cow, cost of feed deducted.	72 05	83 40	88 57	89 48

Mr. Armstrong grows millets, fodder corn and principally prairie hay for winter feeding. He has some alfalfa also, and it is thriving quite well. It has the root tubercles already formed; they seem indigenous to this prairie soil. Whence? Why? He does not think alfalfa will soon cut much of a figure here; the wild grasses are too common and cheap. In truth, they are not nearly all cut yet. Yesterday I walked through what we call "maiden cane" in the mountains; it is much taller than my head. It is coarse, and not esteemed here, though we were glad to get it out there. Wheat bran is generally cheap and largely fed. Barley and oats are ground and fed. It is doubtful, to my mind, if anything can be as cheap a source of protein as alfalfa, and prairie hay need and must have protein added to make milk or growth.—Ed.

SOUTHWEST VIRGINIA LIVE STOCK SHOW AT RADFORD, VA.

Splendid exhibits were made by Major Cowan, of Montgomery; Major Bentley, of Pulaski; Mr. J. R. K. Bell, of Pulaski; Mr. W. W. George, of Smyth county; Mr. F. A. Heatwole, of Rockingham county; Virginia Polytechnic Institute; Mr. S. W. Anderson, of Greenbrier, and Mr. H. L. Morgan, of Smyth county.

Gwendolin the VII, a magnificent Montgomery bred cow, owned by Major Cowan, deserves special mention, having won four prizes at this exhibition. Indeed, she is one of the finest specimens of Shorthorns to be found anywhere. Her weight is about sixteen hundred pounds.

Another of the finest animals in the exhibit was Miss Ramsden's Knight, a Shorthorn bull of the purest strain, weighing 2,200 pounds, and owned by W. W. George, of Saltville.

The best bull in the Hereford herds was Actor, a splendid animal, owned by Mr. Anderson; the best cow, Miss Peerless, also owned by Mr. Anderson.

PREMIUM LIST—SHORTHORNS.

Best bull, 3 years old and over, seven entries—First prize, \$40, won by Miss Ramsden's Knight; owner W. W. George, of Saltville. Second premium, \$30, won by Governor Tyler; owner, F. A. Heatwole, Rockingham county.

Best bull, 2 years old and under 3, one entry—First prize, \$25, won by Red Cup; owner, J. T. Cowan, Montgomery.

Best bull, 1 year and under 2, five entries—First premium, \$20, won by Red Rock. Second prize, \$10, won by Radford; owner, W. W. Bentley, of Pulaski.

Best bull calf, seven entries—First prize, \$10, won by No Name; owner, W. W. Bentley, Pulaski. Second prize, \$5; owner, J. T. Cowan.

Best cow, 3 years old and over, nine entries—First prize, \$40, won by Gwendolin the VII; owner, J. T. Cowan. Second prize, \$30, won by Hawthorne XLVII; owner, Virginia Polytechnic Institute.

Best cow or heifer, 2 years and under 3, four entries—First prize, \$25, won by Rose of Weldon; owner, Virginia Polytechnic Institute. Second prize, \$15, Hawthorne LIII, Virginia Polytechnic Institute.

Best heifer, 1 year and under 2, thirteen entries—First prize, \$20, Gwendolin XI; J. T. Cowan, owner. Second prize, \$10, won by Japonica XXVI; W. W. Bentley, owner.

Best heifer calf, seven entries—First prize, \$10, won by Hawthorne LX; owner, W. W. Bentley. Second prize, \$5, won by Miss Ramsden's Knight's Beauty; owner, W. W. George.

Best cow and calf, seven entries—First prize, \$50, won by Gwendolin VII and calf; owner, J. T. Cowan. Second prize, \$30, won by Hawthorne XLVII and calf; owner, Virginia Polytechnic Institute.

HERD.

Best bull and not less than four cows or heifers, 3 years and over—First prize, \$60, won by Gwendolin Cup, with Gwendolin VII four times Blue Ribbon winner sired by the world-famous young Abbotsburn, and four mates; J. T. Cowan owner. Second prize, \$30, won by Governor, with Lady Josephine and three mates; owner, Major W. W. Bentley.

Best young herd, consisting of bull and four heifers

between 6 and 24 months old, two entries—First prize, \$60, won by Red Rock and four yearlings; owner, Major Bentley. Second prize, \$30, won by No Name and six yearlings; owner, Major Cowan.

Best bull, of any age, nine entries—First prize, \$50, won by Miss Ramsden's Knight; owner, W. W. George. Second prize, \$20, won by Governor Tyler; owner, F. A. Heatwole.

Special premium by J. T. Cowan on best bull bred by him to owner, \$20, won by Governor Tyler; owner, F. A. Heatwole.

Best cow or heifer, of any age, seven entries—First prize, \$50, won by Gwendolin VII; owner, J. T. Cowan. Second prize, \$20, won by No Name; owner, Virginia Polytechnic Institute.

Best bull bred by exhibitor, four entries—First prize, \$40, won by Gwendolin Cup; owner, Major J. T. Cowan. Second prize, \$20, won by Delany; Major Bentley, owner.

Best bull and four or more cows or heifers, bred by exhibitor, two entries—First premium, \$50, won by Red Rock and four cows; owner, Major Bentley. Second premium, \$30, Gwendolin Cup and four cows; Major Cowan, owner.

Best bull and four of his get, without regard to ownership—First prize, \$50, won by Champion Cup; owner, J. T. Cowan.

Best cow and her produce, without regard to ownership, \$40, won by Gwendolin III, and her offspring, Governor Tyler, Gwendolin VII, and Gwendolin XI; Major Cowan, owner.

HEREFORDS.

Best bull, 3 years old and over, two entries—Actor III, first prize, \$40, to S. W. Anderson, Blakes Mills, W. Va. Second prize, \$30, Gazette, to H. L. Morgan, of Saltville.

Best bull, 2 years old and under 3, five entries—Van, first prize, \$40, S. W. Anderson. Marquis of Salisbury, second prize, \$30; Virginia Polytechnic Institute, owner. Alpha, third prize, \$20; H. L. Morgan, owner.

Best bull, 1 year and under 2, five entries—Sylvanus, first prize, \$40; Britton XI, second prize, \$30; both owned by S. W. Anderson. Fitzmorris, third prize, \$20; H. L. Morgan, owner.

Best bull, 6 months old and under 2 years, four entries—Garfield II, first prize, \$30; Marmaduke VII, second prize, \$25; both owned by S. W. Anderson. Marquis third prize, \$15; Virginia Polytechnic Institute, owner.

Best bull calf, under 5 months old—Crimson Rambler, \$25; H. L. Morgan, owner.

Best cow, 3 years old and over, three entries—Francis J., first prize, \$40; and Princess Aline, second prize, \$30; S. W. Anderson, owner. Third prize, Cinderella, \$20, H. L. Morgan, owner.

Best cow or heifer, 2 years old and under—Miss Peerless, \$40; S. W. Anderson, owner.

Best heifer, 1 year old and under 2, eight entries—First prize, \$40, won by Janice; second prize, \$30, won by Anita II; both owned by S. W. Anderson. Third prize, \$20, won by Castalia Nymph; Virginia Polytechnic Institute, owner.

Best two animals of either sex, produce of one cow—First prize, \$30, won by Janice and Woodland. Second prize, \$20, won by Miss Aline and Miss Actress.

Third prize, \$15, won by Van and Gladys; owner of lot, S. W. Anderson.

Best four animals of either sex, any age, get of one sire, twelve entries—First prize, \$30, won by Miss Peerless, Anita II, Janice, and Ingleside. Second prize, \$25, won by Sylvanus, Andrea, Actor XXVI, and Miss Aline II. Third prize, \$20, won by Alpha, Fitzsimmons, Mountain Lad, and Crevison Reindeer; owned by S. W. Anderson.

Best heifer, 6 months and under 1 year, six entries—Aline II, first prize, \$30; Andrea, second prize, \$25, Alberta, third prize, \$15; all owned by S. W. Anderson.

GRAND SWEEPSTAKES.

Best bull of any age, \$30, won by Actor; owner, S. W. Anderson.

Best cow or heifer of any age, Miss Peerless, \$30; owner, Mr. Anderson.

POLLED ANGUS.

Best bull, 3 years and over, two entries—First prize, \$30, J. R. K. Bell, Pulaski, on Hardy. Second prize, \$20, won by Fyffe; owner, Virginia Polytechnic Institute.

Best bull, 2 years old and under 3—First prize, \$15, won by Newler; owner, J. R. K. Bell.

Best bull, 1 year and under 2—Tiptoe, first prize, \$10 Gay Quincy, second prize, J. R. K. Bell.

Best bull calf—First prize, \$7.50, to J. R. K. Bell on No Name. Second prize, \$2.50, to J. R. K. Bell, on Montvale Norice.

Best cow, 3 years old and over—First prize, \$25, won by Minor No. 10. Second prize, \$15, won by Lakeside Novice; both owned by Virginia Polytechnic Institute.

Best cow or heifer, 2 years and under 3—Fyfine, \$10; Virginia Polytechnic Institute, owner.

Best heifer, 1 year and under 2—First prize, \$7.50, Fyffe II; owned by Virginia Polytechnic Institute. Second prize, \$2.50; won by Mont Hilda IV; owner, J. R. K. Bell.

Best heifer calf—Hilda S.'s S. S. C., first prize, \$3; J. R. K. Bell, owner. Second prize, \$2, won by Mina XI; owner, Virginia Polytechnic Institute.

Best cow and calf—First prize, \$15, Minor X and calf; owner, Virginia Polytechnic Institute. Second prize, \$10, Dixie Betty and calf; owner, J. R. K. Bell.

TEST OF VIRGINIA-OWNED JERSEY COW.

Our Jersey cow, Fancy Nostar, 127,415, was fresh February 1, 1902, and since then has milked as follows: February, 769½ lbs.; April, 837½; June, 728; March, 932½; May, 819; July, 637; August, 600; September, 554½, and fell to calve in December, and still milking 18 or 19 pounds per day. Her milk shows near 5 per cent. butter fat, so she proves herself to be a very profitable cow, making over 300 pounds of butter fat in ten months. We much prefer yearly records to seven day tests to prove our cows are profitable.

Would like to encourage the use of scales and Babcock tests in cow stable as a means of putting the herd on a paying basis.

Forest Home Farm, Va.

H. T. PANCOUST.

WHY WE PRACTICE WINTER DAIRYING.

Editor Southern Planter :

Formerly, with the exception of one cow to supply our own family with milk during the winter, we had our cows calve in April; but for a number of years past we have arranged to have them fresh in September, so as to obtain the better prices for dairy products which always rule during the fall and winter months. When the cows "came in" in the spring, of course the bulk of our butter was made in June, July and August, and during hot weather had to be solidly packed into firkins and tubs and held until cooler weather before shipping to market.

When ice was used in the tank to cool the milk, and the butter was kept well covered with brine in a clean, cool cellar, uncontaminated by foul odors, our butter was preserved in good condition, and sold in October about as well as freshly-made butter; but the taste of consumers has changed since then, and they are unwilling to buy old butter, be it ever so sweet and good, unless it is cheap. This being the case, the best thing dairymen could do was to change their arrangements so as to supply customers and consumers with freshly made butter at the time they want it, and are willing to pay well for what they want. In our case, I think the change from summer to winter dairying was beneficial in several ways:

1st. Cows fresh in the fall, kept in a warm, well-ventilated stable, well fed and watered, will give milk for a longer period than spring cows. Supplied with good corn fodder or clover hay, and two feeds a day of wheat bran and corn meal, the flow of milk will be kept up until spring, and then, when turned out to pasture, will not shrink for a long time, and if the bran feed is kept up, it will increase the flow of milk considerably.

2d. We have the greater part of the season's make of butter to sell when the price is the highest, or if the cream is taken to the creamery, the result is the same.

3d. It is less trouble to make and market a good article in cool weather.

4th. Better calves can be raised, because they will be so much older and larger than spring calves to eat grass in the summer and endure the rigor of the ensuing winter.

5th. It brings the greater share of the milking, churning, or taking the cream to the creamery and feeding the calves (if calves are raised), at the season when business on the farm is not hurried, and the farmer and his family have the most time to attend to them.

Another thing, cows that calve in the fall are gen-

erally in flesh, with an abundance of strength to bear the demands of maternity and the constant strain on their systems to which good milking cows are subjected. Cows that calve in the spring are more apt to be in poor flesh and weak, and not likely to do so well, and perhaps retain the placenta. The retention of the placenta used to be more common in the old times, when the farmers kept their cows in the barn-yard. It is not so common since cows are generally stabled.

When a cow is well advanced in pregnancy she looks plump, and apparently in good health, but as soon as she calves, her owner is surprised to see how she has caved in on both sides, and that she is poor at the time she ought to be fat, if she is expected to maintain her good reputation in the dairy.

I never had a cow too fat when she calved but once, and then I had foolishly fed her a full ration of meal up to the time she calved, thinking I was doing a fine thing; but, alas! her udder was so full of tallow, there was no room for a store of milk, and the calf, which was a puny little thing, sucked nearly all the time, and could hardly get enough to keep from famishing.

It is said that the milk from poor cows has but very little cream in it. The reason is obvious: the poor cows have to retain the cream to keep the flesh on their bodies, and then cannot help growing poorer all the time.

The feeds which are practically valuable for milk cows in the winter are corn meal, buckwheat meal, wheat bran, buckwheat bran, wheat middlings, and ground oats. The latter is usually relatively higher in price than other grains which are just as good for milk production, and can be profitably sold and the money used for the purchase of bran.

Cows have a craving for something besides dry foods, and are fond of a variety. Ensilage is all right when well preserved, but we have always got along very well with pumpkins, potatoes, turnips, ruta bagas and apples for succulent foods in winter, and I think the cows were just as well pleased and made as good returns as if they had been fed ensilage, and the cost was certainly no greater.

The disadvantage of winter dairying is in having to feed more meal and bran to get a good flow of milk and keep it up until grass comes. It costs more to make winter milk and butter, but according to our experience, the higher prices of the winter market more than pays the additional expense for feed, and the grain fed to cows in the winter makes rich manure for the cornfield.

J. W. INGHAM.

When corresponding with advertisers, say that you saw the advertisement in the *Southern Planter*.

THE RAZOR BACK HOG.

Editor Southern Planter :

To one who has given his entire life to the production of improved live stock, whose father and grand father followed the same honorable calling, and who believes that the best is none too good, an article like the one written by Mr. Hopkins in the October *Planter* (in which he advocates the use of the razor back hog), comes as a severe shock and makes one stop in wonder and ask if what he says be so of what account have all the years of toil and thought, and the great expenditure of money by breeders been to mankind if we must come back to the use of the *scrub* in order to make both ends meet? Does the life work of such great men as Booth, Bates, Marr, Grant, McCombie, Sotham, Dunham, and ten thousand others count for nothing? If so, then why not go back to the stage coach as a means of conveyance, to the ox as a beast of burden and take things easy. The whole matter rests right on this point. If improvement in live stock amounts to *any thing* then it amounts to *everything* and reaches to every branch of the business. The writer believes in pure-bred or high grade stock of the best quality, and thinks as much of good blood in the "mortgage lifter" as he does in the beef or dairy cow and saddle or driving horse.

We will never get our live stock too good, so that we will never produce a poor animal. Then let us use every means in our power to *improve* rather than help to deteriorate the great breeds our fathers gave their lives to build up.

The South needs all the good blood she can get, and needs good stock men behind the good blood. The lack of these is all that stands in the way of her being one of the greatest stock countries in the world.

Rockingham Co., N. C.

A. L. FRENCH.

THE HOG AS A MORTGAGE LIFTER.

Editor Southern Planter :

We are constantly hearing it does not pay to raise hogs for profit with corn at present prices. Now, I want to prove it does pay. If the hog is handled right and forced along he can't find time to eat his head off in six months with 175 pounds to his credit. I have on my farm a brood sow that has littered three times in ten months, raised ten pigs each time, making thirty pigs in ten months. I have sold eighteen of these hogs at from five to six months old, weighing from 150 to 175 pounds each. The nicest weighed 150 at five months old. They brought me \$180 (one hundred and eighty dollars). I have two on hand now for family use which are worth \$25, which would make \$205 in eleven months. Now, who will deny that is

not turning over money as fast as any other farm animal. But I hear some one ask what did they cost? I did not keep accounts with these but I did with a litter of seven last year that were not as thrifty pigs. I fed them \$15 worth of grain in six months and sold four of them at six months old for \$28; had three left and \$13 for my trouble and milk. These hogs were sold at two cents less per pound than those I sold this year, and corn was selling at about the same price. Corn can't get far ahead of pork at any time. Then we have milk to help on the profit also. We can turn our money over faster in hogs than anything else on the farm that is handled in bulk.

Goochland Co., Va.

N. S. W.

GALLOWAY CATTLE IN VIRGINIA.

Editor Southern Planter :

It may interest you and some of your readers to know that I have just purchased a bunch of registered Galloway cattle. They consist of five cows and one bull calf, all bought of Charles Deeds & Son, of Granville, Ohio.

These are excellent cattle and bred right. The young bull, Dewey III, won second in the calf class at the Ohio State Fair. I also secured the cow Sarah of Elrig, which won second in aged cow class at the same show.

These cattle won in competition with the herd of Mr. James Frantz, whose cattle won high honors at the International stock show last year.

I hope to give you further reports of these cattle which have just arrived at this farm. The cows are now all in calf to Straightback, who won second at Ohio State Fair.

Gloucester Co., Va.

N. S. HOPKINS.

We are glad to hear of this new acquisition to the herds of cattle in this State, and shall be pleased to hear further from them.—ED.

To reduce swelling in a cow's bags shave up some good turpentine soap and add half the quantity of soft water and one-third of strained honey; dissolve slowly on the stove; when cold it should be as stiff as vaseline; keep in stone jar (not tin), and rub all milk veins and bag well with it after milking, and two or three times daily. I found it was the best thing I ever tried. It saved several calves, after painful surgical operations and made cows bags firm and healthy that had been neglected over a year. Apply as soon as the least swelling is noticed, and on fresh (young) cows as soon as milked or before fresh, if bag seems red and unnaturally distended. It seems cooling, and cows like to be treated. It is good for man and beast, soothes all boils and carbuncles. From one who has tested it.

Culpeper Co., Va.

L. F. MAJOR.

OFFICIAL RECORDS OF HOLSTEIN-FRIESIAN COWS.

From July 29 to September 1, 1902

One thirty-day record and twenty four seven day records have been received and approved during this period.

The thirty-day record is especially remarkable. DeNatsey Baker 55471, age 2 years, 2 months, 7 days; commenced record 8 days after calving; during thirty consecutive days thereafter, produced an average of 56.31 lbs. of milk per day—a total of 1,689.9 lbs. This milk contained 56.523 lbs. butter fat; equivalent butter 80 per cent. fat, 70 lbs. 10 5 oz., or 65 lbs. 15.1 oz. 85 7 per cent. fat—a daily equivalent of over 2 lbs. 5.5 oz. butter 80 per cent. fat or over 2 lbs. 3 oz. 85 7 per cent. fat. This heifer is owned by Chas. D. Pierce, San Francisco, Cal.

Another remarkable record for the season is that of the seven day record of Mattie Clay's Aaggie 2nd, 42178; age 6 years, 6 months, 10 days; commenced 10 days after calving. She produced 499.1 lbs. milk containing 19.168 lbs. butter fat equivalent to 23 lbs. 15 4 oz. butter 80 per cent. fat, or 22 lbs. 5.8 oz. 85.7 per cent. fat. She is owned by Pierce Land & Stock Co., San Francisco, Cal.

Another large seven day record is that of Velma Niva 41675, age 5 years, 11 months, 24 days; commenced 23 days after calving. She produced 454.3 lbs. milk containing 16.226 lbs. butter fat, equivalent to 20 lbs. 4 5 oz. butter 80 per cent. fat or 18 lbs. 14 9 oz. 85.7 per cent. fat. Owner W. B. Smith & Son, Columbus, Ohio.

THE HOG PEN.

Editor Southern Planter:

So much has been written concerning the necessity for clean quarters for hogs that it would seem to the readers of agricultural papers that the filthy hog pen would, ere this, have been a thing of the past, but the old idea that the hog enjoys filth and that a stinking rail pen is good enough for hogs still prevails with many. A careful, thoughtful observation of a hog's actions when penned up in a close pen ought to teach any one better. Under such circumstances a hog will deposit all excrement in the farther corner of the pen, and he will dig great holes in the ground in order to get to fresh, pure earth. This only makes the matter worse, as the rain will make the fresh earth into mud, and the hog is compelled to wallow in his own filth in spite of all his efforts to do better. It seems as if self interest would prompt the owner to do a better part by his hogs, but there are many

whom you cannot make believe but that a hog will do as well in mud and filth up to his body as in a clean, nice pen. Some writers go to the opposite extreme and picture their ideal quarters for hogs so nicely that the plan disgusts the average farmer, and as such nice hog houses are not practical they are dropped without further consideration. A very good enclosure may be constructed by making a pen of slats light enough that two persons can move them onto fresh ground each day. A pen of this kind, eight by ten feet, will do very well for three or four pigs, and they can be moved about without much trouble. I prefer to let hogs have the run of a field when it can be done, but sometimes it is necessary to pen them.

Albion, W. Va.

A. J. LEGG.

COST OF MILK.

For the past five years the New Jersey Experiment Station has kept an account of the cost of producing milk with its herd of 23 to 30 cows and publishes its findings in a report just issued. The average yield per cow was 6,479 pounds. The average cost of food per cow per day was 13.32 cents, of which 6 11, or 49 6 per cent., is due to purchased feeds, and 6.21, or 50 4 per cent., to the cost of farm crops. The average cost per quart of milk for the five years, including food, labor and interest and decrease in the value of the herd, is shown to be 2.38 cents. The cost of farm crops fed is the actual cost of producing them and not their selling price. Other feeds were charged at what they cost laid down at barn.

SALE OF HEREFORDS.

BY CLEM GRAVES, BUNKER HILL, IND., AT INDIANAPOLIS, IND., SEPTEMBER 16.

All Hereford price records fell before the bids at the dispersion sale of Clem Graves' herd by the Indianapolis Sales Company. A bid of \$10,000 was made for the bull Crusader, a bid of \$7,000 for the cow Dolly 2nd, and the average on forty three head was \$1,007.

37 females sold for \$30,375—an average of \$820.95.

6 bulls sold for \$12,925—an average of \$2 154.15.

43 head sold for \$43,300—an average of \$1,007.

TEST OF GUERNSEY COW.

The official record of Portia of Maplehurst, 602 37 pounds butter fat, which would be equivalent to 702 7 pounds butter, is the largest year's record of any cow made under regular and careful public supervision and test each month.

Peterboro, N. H. WM. H. CALDWELL, *Secretary.*

Mention the *Planter* when corresponding with advertisers.

The Poultry Yard.

COST OF PRODUCING SUMMER EGGS.

During the past year a number of inquiries were received, asking for information as to the exact cost of producing a dozen eggs during the summer months. With this object in view we selected two pens of hens, one of Barred Plymouth Rocks, and the other of Andalusians. Each pen consisted of 12 hens and a male bird.

Each flock had a pen in the poultry house 12 feet by 14 feet, and a sodded yard attached 80 feet deep and the same width of the pen.

The hens were usually fed four times a day whole grain in the litter or straw, in the morning; meat or bone at noon, three or four times per week; other days no noon feed was given. Mash at four in the afternoon, composed of equal parts of bran, shorts and ground oats, moistened with skim milk; just before dark, a little whole grain.

April 22d to May 22d. Rocks—13 hens, 1 cock :
 Mixed feed—17.687 lbs., at \$1.33 per cwt.. 23.576 cts.
 Bone—12 687 lbs., at \$1 per cwt..... 16 687 “
 Mash—32.375 lbs., at 95c. per cwt..... 29.137 “
 Wheat—21.875 lbs., at \$1.13 per cwt..... 27.79 “
 Milk—32 lbs., at 15c. per cwt..... 3.33 “

Total..... 100.52 “

Eggs laid, 16 dozen; cost per dozen, 6.28 cents.

Nearly all Rocks were broody during last week.

April 22d to May 22d. Andalusians—
 13 hens, 1 cock:
 Mixed cracked grain—14 3 lbs., at \$1.33
 per cwt..... 25.99 “
 Green bone—13.75 lbs., at \$1 per cwt 13.75 “
 Mash—35 lbs., at 90c. per cwt..... 31.05 “
 Wheat—24 lbs., at \$1.33 per cwt., or 68c.
 per bushel... 27.19 “
 Milk—35 lbs., at 10c. per cwt..... 3.5 “

Total..... 101.48 “

Eggs laid, 20½ dozen; cost per dozen, 4.9 cents.

May 22d to June 22d. Barred Rocks:
 Oats—2 lbs. 8 ozs., at \$1 per cwt..... 2.8 “
 Bone—2 lbs., at \$1 per cwt..... 11. “
 Mash—40 lbs., at 90c. per cwt..... 36. “
 Milk—40 lbs., at 10c. per cwt..... 4. “
 Wheat—34 lbs. 13 ozs., at \$1.13 per cwt... 39.58 “

Total..... 93.38 “

Eggs laid, 13 dozen and 10; cost per doz., 6.82 cents.

May 22d to June 22d. Andalusians—
 Milk—40 lbs., at 10 cts. per cwt... 4. “
 Oats—3 lbs., at \$1 per cwt 3. “
 Wheat—35 lbs. 7 ozs., at \$1.13 per cwt.... 40.15 “
 Mash—40 lbs., at 90c. per cwt..... 36. “
 Bone—11 lbs. 6 ozs., at \$1 per cwt 11.37 “

Total..... 94.52 “

Eggs laid, 18 dozen and 2; cost per doz., 5.21 cents.

June 22d to July 22d. Barred Rocks :
 Wheat—26.375 lbs., at \$1.13 per cwt..... 29.80 cts.
 Oats—6.25 lbs., at \$1 per cwt..... 6.25 “
 Mash—41.75 lbs., at 90c. per cwt..... 37.57 “
 Milk—41 lbs., at 10c. per cwt..... 4.1 “
 Bone—1 lb., at \$1 per cwt..... 1.00 “

Total..... 78.72 “

Eggs laid, 13 dozen and 10; cost per doz., 5.69 cents.

June 22d to July 22d. Andalusians :
 Wheat—35.625 lbs., at \$1.13 per cwt... 40.25 “
 Oats—6.25 lbs., at \$1 per cwt..... 6.5 “
 Mash—40 lbs., at 90c. per cwt..... 36.00 “
 Milk—40 lbs., at 10c. per cwt..... 4.00 “
 Bone—1 lb., at \$1 per cwt..... 1.00 “

Total cost 87.75 “

Eggs laid, 16 dozen and 1; cost per doz., 5.42 cents.

July 22d to August 22d. Barred Rocks:
 Wheat—32.625 lbs., at \$1.13 per cwt..... 37.99 “
 Oats—9 lbs., at \$1 per cwt... 9.00 “
 Mash—39.5 lbs., at 90c. per cwt..... 35.55 “
 Milk—40 lbs., at 10c. per cwt..... 4.00 “
 Bone—12 lb., at \$1 per cwt..... 2.00 “

Total cost..... 88.54 “

Eggs laid, 14 dozen and 1, cost per doz., 6.28 cents.

July 22d to August 22d. Andalusians :
 Wheat—27.25 lbs., at \$1.13 per cwt 30.79 “
 Oats—14.875 lbs., at \$1 per cwt..... 14.875 “
 Mash—4.05 lbs., at 90c. per cwt..... 36.45 “
 Milk—40 lbs., at 10c. per cwt..... 4.00 “
 Bone—3 lbs., at \$1 per cwt..... 3.00 “

Total cost... 89.115 “

Eggs laid, 14 dozen and 9; cost per dozen, 5 cents.
 Average cost per dozen for Rocks, 6.32 cents.

Average cost per dozen for Andalusians, 5.38 cents.

W. R. GRAHAM,

Ontario Agricultural College Report.

POULTRY AND DOG SHOW.

An advertisement in this issue announces the Second Annual Poultry, Pigeon and Pet Stock Show to be held in Richmond, Va., November 24th to 29th, 1902, in the Masonic Temple, corner of Broad and Adams streets. This show promises to be a banner show. Prizes are large, and competent judges will place the awards. The prizes in the dog department are very attractive, comprising many valuable presents donated by Richmond merchants. Entries close November 14th. *Send for premium list at once.* Address Frank Jenkins, Secretary, 517 West Broad street, Richmond, Va.

The Horse.

NOTES.

Major George Chrisman, a veteran breeder and farmer of the Valley of Virginia, and one of the leading spirits of the Harrisonburg Horse Show, sends me the following interesting communication. My Stud is rather a mixed one than otherwise, from the fact that soon after the War I began to breed draft horses because during hostilities nearly all others had been driven off, and those suitable for farm work were very scarce. I then brought three Percheron stallions here, and from that time the draft stock of Rockingham county began to improve. There has not been a year since 1863 that I have not had one or more good draft stallions doing missionary work in this section. Of my collection, numbering about thirty head, one-third are Percheron, the remainder being half bred Hackneys, saddle bred and half thoroughbred horses, while I own an interest in the Percheron stallion Bordeaux, in General Miles, a prize winning saddle stallion, and in Sam Corey, thoroughbred son of Long Tow and Algebra, by Imp. Highlander, who was a great steeple chase horse, and bids fair to sire a line of fine hunters and jumpers. Among my brood mares are a couple by Sam Purdy, 2:20½, dam by Tam O'Shanter, son of Planet, Eliza South, by General Miles, dam May Queen, by Forset Denmark; Maid of the Mist, by Montrose Squirrel, 1257, dam May Queen; Kate Montrose, by Montrose Squirrel, dam Sir Roger, Hackney, and others not only by the same stallions, but by Chorister, thoroughbred son of Falsetto.

I have some fine young geldings and mares from two years old and upwards, and these will be prepared for our annual horse show at Harrisonburg, where I hope to carry off a fair share of the ribbons offered.

One of the principal attractions at Morris Park, New York, on the 11th instant was the winning of the bay gelding Self Protection in the \$10,000 Champion Steeplechase with his owner, Harry Page, an amateur up. Self Protection was sired by thoroughbred Parapline, dam a half bred mare. He was brought East from Montana by Sidney Paget with a bunch of other horses and sold at auction for the mere bagatelle of \$40. Later he passed to Mr. Page, who has ridden the horse to hounds in twelve and fifteen miles runs across the country. A natural jumper, Self Protection has steadily improved in speed and general good qualities since the season opened. Pat Maney has trained Self Protection and owner Page has done the riding, and if instructions had been fully carried out according to the trainer's directions the horse would have won some good races that were lost. Mr. Page and trainer Maney will take the horse to England this fall and fit him for the Grand National Steeplechase at Liverpool to be run next March, when his owner will have the mount. The splendid career of this horse carries with it a lesson that Virginia breeders should find of profit, as in this State, as in no other in the country, are the pro-

duce of thoroughbred sires from general purpose mares to be found in great numbers, and it is just such breeding that resulted in so great a horse as Self Protection.

A grand success was the Richmond Horse Show, which began on Tuesday evening, October 14th, and continued through the week. The attendance exceeded all expectations, and the greatest lot of horses ever paraded on a tan bark arena in the South were shown. Entries came from Chicago, New York, Philadelphia and other big centres. The management, including President J. T. Anderson, Secretary W. O. Warthen and others, were well pleased over the result, which financially proved a paying investment. Not the least pleasing feature for Virginia breeders and owners was the medium it furnished between buyer and seller, and some very satisfactory sales were recorded, among them being that of Julian Morris' chestnut gelding Churchill, 6, 16:2, by Palinurus, to Richard Wallach, agent for J. Hobart Moore, Chicago, for \$1,000, while the same party purchased of Harry C. Beattie, Vice-President of the Richmond Horse Show Association and M. F. H. of the Deep Run Hunt Club, the chestnut gelding Red Light, 6, 16:2, by King Bolt, Jr., for \$500. In addition to these other sales followed with smaller prices obtained.

One of the most consistent performers of the Maryland and Virginia Circuit of fairs and race meetings during the present season has been the brown mare Skyland Girl in the stable of Geo. F. Dyer, of Greensboro, N. C., by whom she has been trained and driven. This nine-year old daughter of Simmons, 2:28, and Mamie Woods, 2:20, by Woods' Hambletonian, was campaigned by Dyer in the South during the latter part of 1901, winning several races and pacing to a record of 2:24½, which has been lowered several times during the present season, but the best performance of Skyland Girl was at Prospect Park, Baltimore, when the daughter of Simmons won the 2:24 class, pacing, and stepped three heats in 2:20½, 2:19½, 2:20½ with eight horses behind her. Before coming into Dyer's stable Skyland Girl was not looked upon as particularly promising, but in his hands she has developed both speed and race horse quality, and if she keeps right is likely to pace right around 2:10 over a good track this season.

The horse breeders of Virginia have formed an Association, the object of which is to encourage the breeding of fine horses in the State. A meeting was recently held at Dr. James Kerr's farm, near Warrenton, where a number of representative breeders were in attendance. Among those who enjoyed Dr. Kerr's hospitality and discussed the situation were Senator Henry Fairfax, the noted Hackney breeder and former owner of the famous Matchless of Lonsboro, Oak Hill Farm, Aldie; Gen. B. D. Spillman, of Warrenton; Robert Neville, former owner of Imp. Rigollette, Welbourne; James Hall; James K. Maddux,

Warrenton; E. Astley Cooper; Henry Harrison. Leesburg; H. Rozier Dulaney, Upperville, and other representative breeders and owners.

The Keswick Hunt Club, of Keswick, Albemarle county, like other Virginia organizations of a similar nature, promises to have a good season, and its members are looking forward to great sport riding to hounds.

Julian Morris, the well known horse show patron and breeder and owner of fine jumpers and hunters, is the M. F. H. of the Keswick Hunt, and among those who ride at the semi-weekly meets are Mr. and Mrs. Jack Allen, of Chicago, who are sojourning at Keswick for the hunting; Mr. and Mrs. H. E. Mc Gruder; Mrs. Dr. Thurman, Frank Randolph, George Macon, W. H. Lipscomb, Alexander Hamilton, John Sawyer, and others. Some twenty five or more hounds are kept by the Keswick Hunt, and foxes are said to be abundant in that section this season.

Geo. F. Dyer, of Greensboro, N. C., who campaigned the brown pacing mare Skyland Girl, 2:19½, for A. P. Craddock, Lynchburg, has sold her to parties in Pennsylvania for \$1,000. She was a good winner for Dyer this season. She was sired by Simmons, dam Mamie Woods, 2:20, by Woods' Hambletonian. Skyland Girl was bred in Kentucky, but foaled the property of R. J. Reynolds, the wealthy manufacturer and head of the great Southern concern known as the R. J. Reynolds Tobacco Company, of Winston, N. C. Mr. Reynolds bought Mamie Woods while in foal, and kept her for several years after Skyland Girl was foaled.

Through an advertisement which I inserted in this journal last month a sale has been effected of the Hackney stallion Heidrick, son of Imp. Dangel and Imp. Heroine, by E. W. Twardell, of Philadelphia, to Messrs. C. F. and Joseph Button, of Laurel Hill Farm, Walker's Ford, Va., by whom he will be used in the stud, and should make an admirable cross for the production of good harness horses. Col. Jos. Button, widely known in political circles, went to Philadelphia, and finding the stallion as represented, made the purchase. Mountain, out of Heidrick's dam, has won numbers of prizes at New York, Boston and other big shows, while the few foals by Heidrick stamp him as a sire of merit.

The chestnut mare, Eliza Ingram, is showing great speed on the road for her owner, Mr. E. A. Saunders, of this city, and with it she has good manners and a level head. During the forepart of this season, Eliza Ingram reduced her record from 2:25½ to 2:21½, while in her work she could trot right around 2:15. When retired from the road and track, this mare should make a valuable addition to any trotting stud, both on account of her rich breeding and speed, as she was sired by the famous pacer, John R. Gentry, 2:00½, out of Blondette, dam of Governor Holt, 2:15, by Leland.

Mr. S. G. Atkins is driving his bay mare, Marie,

2:30½, on the road, where she is steady and level-headed, and it takes a good horse to beat her in a brush. Marie was sired by Jolly Friar, dam Parker Holland, by Sam Purdy. Mr. Atkins' other fast mare, Red Light, 2:21½, the daughter of Red Wilkes, Jr., and Moonlight, by Twilight, is in the stable of W. L. Bass at Acca Farm. Red Light showed enough speed early in the season to justify the belief that she would make a new record close to 2:15, but trained off and was let up in her work.

The bay mare Cassie Leo, bred at Walton Farm, Fall's Mills, Va., entered the list of standard speed at the recent fair and race meeting at Bethlehem, Penn., where she won the 2:50 class, trotting, in straight heats, time 2:24½, 2:24½, 2:23½. Cassie Leo was sired by Red Leo, 2:26½, the son of Red Wilkes that heads the Walton Farm, while her dam is Tea Rose, a member of the brood mare band there. Tea Rose was by Mecca, out of the great brood mare Moss Rose, by Woodford Mambrino, and she out of famous Primrose, by Abal-lah 15.

After the close of the Richmond Horse Show, a portion of the horses were shipped home, others went to Chicago, but the majority went to Lynchburg; and referring to the latter, the dates of which were October 22, 23 and 24, I may add that it was a great success, and dwellers in the "Hill City" hope to make it a permanent affair.

Charles A. Brown, of this city, has sold to J. W. Johnson, Houston, Va., the brown trotting gelding Sebacic, by Norval, 2:14½, out of Gladys, dam of Kitty Hawk, 2:27½, and Enfaula C., 2:28½, by Alcantara.

BROAD ROCK.

IMPORTANCE OF LIGHT.

In the construction and equipment of stables, few points are so sadly neglected as that of light and ventilation. In some parts of the country, any sort of structure is considered good enough for the accommodation of horses, and but scant regard is paid to the results which housing in badly ventilated or otherwise defective buildings must exercise upon the health of the animals. An abundance of light and plenty of fresh air are two of the prime essentials in a stable. In addition to being the best of all preventives against the development of the bacteria, which are now known to be such fruitful causes of disease among farm stock, plenty of sunlight and abundant ventilation in the stable are absolutely essential to the maintenance of the animals kept therein in vigorous, healthy condition. It is well known to veterinarians that defective eyesight and the tendency to shying in horses are often the result of keeping the animals in dark, close stables, the effect of which is to weaken the eyesight of the animals, and thus render them liable to that impairment of the vision, which is the cause of nine out of every ten cases of shying in horses.—*Farmer's Gazette.*

Mention the *Planter* to your friends.

Miscellaneous.

OATS.

Second in Regard to the Number of Bushels Raised in the Country—Different Varieties Cultivated—Flourish Best in a Cool Moist Climate—Believed to Have Sprung from the Wild Oats.

Editor Southern Planter :

The oat crop in the United States has been harvested, and on many farms threshed and disposed of; but oats being one of our most important cereals, a discussion of the crop is in order at any time. The Crop Reporter of the Agricultural Department says that the nine States of New York, Wisconsin, Ohio, Michigan, Pennsylvania, Indiana, Minnesota, Nebraska and Illinois, produced the present year an average of over 14½ points above their ten years' average. Iowa, a great oats-raising State, not quite reaching the ten years' average.

Oats is the cereal which stands third in importance in the United States in regard to the number of acres cultivated, and second, in regard to the number of bushels produced. In the year 1900, corn, wheat and oats were raised as follows :

Wheat—Acreage, 42,493,385. Bushels produced, 522,229,505.

Corn—Acreage, 83,320,872. Bushels produced, 2,105,102,516.

Oats—Acreage, 27,364,793. Bushels produced, 809,125,989.

The two States of Illinois and Iowa produced nearly one third of the oat crop of the United States.

Illinois produced 133,642,884 bushels. Average per acre, 38 bushels.

Iowa produced 130,572,138 bushels. Average per acre, 34 bushels.

Virginia, North Carolina, Tennessee and Maine produced a little over 5,000,000 each. The production per acre in Virginia was 15 bushels. In Maine (probably owing largely to the cooler climate), the production was 37½ bushels per acre.

The statisticians estimate the oat crop of the present year at 850,000,000 bushels—the largest ever raised.

The climate in the Southern States does not seem favorable to oats. In many localities, and especially in Northern Pennsylvania, there is no doubt that it is the most profitable grain raised unless it be buckwheat, which maintains a good price because it encounters no western competition. As we raise oats in the rotation with corn and wheat, the area of oats

could not be increased except by reducing the acreage of these crops.

All the varieties of oats belong to the genus *Avena*, which comprises the wild as well as the cultivated species. There are three pretty well defined classes of cultivated oats. The most common varieties have the husks, or hulls, adherent, and these are divided into two classes, in one of which (as an example the potato oats) the panicle which produces the kernels branches from either side of the stem, while on the other the heads branch only on one side of the stem—as, for instance, the Hungarian. There are also naked varieties, in which the kernels separate from the hulls and are called “Chinese oats” and “hull-less oats.”

Oats grow on all kinds of soils, from heavy clay to light sands, and on moist soils and dry soils, but are most at home, and flourish best, in a cooler and moister climate than that which is best adapted to winter wheat. There are winter varieties of oats, as there are of wheat, rye and barley, but these are not much grown except in the Southern States. Probably not one per cent. of the whole crop produced is winter oats, all the rest being sown in the spring of the year. Four fifths of the crop is raised where the mean annual rainfall is between 30 and 45 inches, and where the spring and summer rainfall is between 15 and 25 inches. In the hot, dry climates, about the Mediterranean, and eastward to Palestine, oats do not grow well, and are less raised than barley. Oats are not mentioned in the Bible—King Solomon fed his horses on barley. The oat was raised in Italy in a small way for horses as early as the Christian era, and also by the prehistoric inhabitants of Europe, for they have been found in the remains of their lake habitations in Switzerland. In Central and Northern Europe, where they grow best, their cultivation became extensive as soon as the people became civilized, and were used as the most important cereal for food. In Scotland, Norway and Sweden, they became the chief bread plant of the people. It is extremely difficult to make a light loaf of bread from oatmeal, and it was generally used, and is still generally used, for making batter cakes, and by boiling the meal in water, and making oatmeal porridge or mush, to be eaten with milk. The weight of oats varies in different localities, and in the same locality in different seasons, all the way from 20 to 46 pounds per measured bushel. In commercial transactions, 32 pounds is the legal weight in most of the States.

As a fodder for cattle on the farm, oat straw is considered to be of more value than any other kind of straw. It being softer, and having more leaves, cat-

tle prefer it, and when secured bright, and in good order, young cattle have been wintered on it without any hay or grain, but probably they did not grow so fast as if they had been fed a richer fodder. Oats produce a large quantity of good fodder when cut and cured in the green state, and the crop is largely raised as a forage crop in the States south of Virginia and Kentucky and east of Arkansas, where it is more difficult to produce large crops of hay from grass. The crop is also grown in the South for pasture. In California also it is grown to some extent for forage. It leaves the ground in good condition for the succeeding crop by furnishing a dense shade, and helps to keep down the growth of weeds.

Oats vary greatly in the amount of meal produced after the hulls are removed, and only the best kinds will produce half their weight in meal.

In Scotland two kinds of oatmeal are used—the one kind ground coarse, which we call oatmeal, and the Scotch call “groats,” which is boiled and eaten in porridge, which is also the manner it is eaten in Ireland and most European countries. The other kind of meal is ground fine like flour, and is used to make the famous cakes called “bannocks” in Scotland and oatcake in the north of England.

It is claimed by some that oatmeal is the most nutritious of all the substances prepared from the cereals, but it is doubtful whether it is more nourishing than cracked wheat, although it may be more palatable to many as a change of diet. Formerly, oatmeal was but sparingly used in this country for human food, but the consumption has increased enormously during the last twenty five years, and it is now found in all the groceries and stores, even on the frontiers of civilization, and barrels are now sold where only pounds were sold once. At first it was imported from Scotland and Ireland, but now the mills in this country are able to supply more than the home demand.

The wild oat is believed by many scientists to be the parent of the cultivated variety, which has been improved by being sown on better ground, and careful selection of seed. Prof. Backman, of England, succeeded in producing a good quality of cultivated oats from seeds of the wild variety after a few years of cultivation and selection.

Heavy oats from a more northern and cooler region, carried into a warmer and dryer one, rapidly deteriorate in weight. In consequence of this tendency to degeneration a considerable trade is carried on in oats from places North to places further South.

J. W. INGHAM.

When corresponding with advertisers, kindly mention the *Southern Planter*.

SAVING PEA-VINE HAY—TIEING CORN SHOCKS.

Editor Southern Planter:

My peas were ready to be cut (some of the pods being ripe) when that article “Curing Pea vine Hay,” by O. W. Blacknall, appeared in the September copy of your valuable journal. Although I had my doubts about this new plan, the article was written and the manner was described with such certainty that I decided to try it.

The next day I started and finished in about ten days, having put up thirty stacks. When I then examined the first stacks, what do you think was the result? Hay on top and ensilage at the bottom, about half and half, as the Irishman says. I went at once to work to open the stacks put up later, and gave the lower part a day's sunshine, such as it is these short autumn days, and put them up again by nightfall, putting the dry upper half of the former stack at the bottom of the new one, but losing nearly all leaves on the damp vines in the transaction. I did not make my stacks any wider than four feet diameter, nor higher than seven feet from the foundation of old rails or poles; but I must admit that the atmosphere was always damp and sultry and hardly any wind blowing at any time during the two or three weeks. I think, however, that two or three poles or old rails tied to the stackpole to form an airshaft in the centre would be an improvement on the Blacknall plan, if it does not cause too much trouble. This may, however, not be necessary in really drying weather with a brisk West wind.

This reminds me of a story of a young physician, who attended to a blacksmith, sick with chills and fever. The latter, tired of taking so much medicine without any effect, ate a big dish of peas and meat and stopped the fever. The young doctor, hearing of this new cure, made a memorandum of it, and prescribed it a few days later to a tailor suffering with the same disease. The tailor, however, not being so robust and vigorous as the smith, died from the dish so hard to digest. Then the doctor made a note underneath stating that it was good for a sturdy blacksmith, but not for a delicate person like a tailor.

So far I had finished my letter, Mr. Editor, when I had to lay it aside on account of some urgent business, and before I took it up again there comes the *Southern Planter* along and brings another explanation from Mr. Blacknall which, I think, he might have inserted in his first description of “How to Cure Pea Vines,” as he now changes the eight or nine feet stacks into stacks of really but four feet high for green and sappy vines, such as mine were to a great extent.

Before I close, let me tell you how I tie my corn

shocks. Out of a two feet long and two inches thick piece of light wood (cedar will do) I make a sharp pin, to the thick end I fasten a crossbar, 1½ feet long. Just beneath this crossbar I drive two wire staples on opposite sides; to one of these I fasten a thick cotton rope about eight feet long, and at the other end of the rope a little hook, easily made of fence wire. I insert the pin in the shock, carry the rope around it, hook the hook in the second staple and twist by means of the crossbar until as tight as I want it, when I tie my string around it.

Experiments which I made this year with sulphate of potash, given to me for that purpose by Mr. T. Freeman Epes, of the Blackstone Guano Co., have shown to me plainly what the *Southern Planter* as well as Mr. Epes had always contended, viz., that it is not needed on our soils. I applied it on watermelons, sweet potatoes and Irish potatoes, all being manured with a complete fertilizer (a tobacco guano). Also I tried it on corn and peas, the latter having a light application of acid phosphate, and not the least sign of improvement could be seen. I did not weigh the roots or fruits.

Lunenburg Co., Va.

CHR. RICKERS.

TIDEWATER (VA.) NOTES.

Editor Southern Planter:

Thinking that you and your readers might like to hear a few words from this section, we beg to report. We have had no killing frosts to date; in fact, no damage has been done to our trucking interests up to the present time, but we are expecting it soon. Our truckers are busily engaged in shipping green peas and beans (snaps) to Northern markets. The yield of beans has been very fine indeed, and the quality most excellent. In many instances as high as one hundred and fifty to one hundred and seventy-five half barrel baskets of beans have been harvested to the acre, which sold in the Northern market at \$1.25 per basket. These snaps are grown upon land which has produced two other crops during the past twelve months.

Fall work is well along, and the soil is in excellent shape as regards moisture, and the fall crops are looking unusually fine. With the exception of one or two days, the weather has been very warm and pleasant. The second crop of potatoes promises to be fine, although some of the vines in those portions of the fields farthest away from salt water show signs of frost on the crop. The crop has not been damaged, and the yield will be well up to the usual crop. This crop furnishes the seed potato for our farmers and truckers to plant next February; also supplies quite a quantity of eatable potatoes for the local market.

Most of the corn is fully matured; but as our people persist in planting corn all the way from April to the first of August, there is much corn now in the roasting ear stage, and great loads of it are brought into the city daily for local consumption.

The silos of this section are being rapidly filled with corn, Soja beans, cow-peas, etc. Year by year our farmers are getting more and more forehanded and provident in the way of storing food for stock, and gradually the stock interests of our section are looking up.

The usual large area of winter cabbage will be set out in November and December, the ground for which is being rapidly prepared. The prices of farm crops is well maintained, sweet potatoes selling for \$1.50 per barrel, which is about 25 cents per barrel in excess of the usual price.

If you desire it, we hope to be able to give you reports of farm work from time to time during the winter months.

A. JEFFERS.

Norfolk, Va., 27th October, 1902.

We shall be glad to have the reports.—ED.

CRIMSON CLOVER AS AN IMPROVER.

Editor Southern Planter:

I have noticed several articles in your editorials as to the use of Crimson clover as an improver of the soil.

I must say my experience with it has not been satisfactory as a continued improver upon the same piece of land. I have grown it since 1895, and have received good results from its uses during the first and second year, but after that I find the soil fails to improve, and goes back to its former state.

My experience is not alone; it is the experience of all farmers of this section who have sown it for any number of years.

In some plots I would mow the clover and turn the stubble under, and in other plots would wait until the clover matured and died and then turn it under, and I find the results the same, the land would return to its former state.

I have a field that grew 60 barrels of Irish potatoes and 6 barrels of corn per acre in 1896. Since then I have followed it every year in Crimson clover until it now refuses to grow the Crimson clover or the corn. The first and second year of sowing the Crimson clover I received the desired results in both clover and corn, but since then the land has continued to go back.

Knowing of the good results I have received from red clover in years past has caused me to discard the Crimson clover this fall and return to my first love, notwithstanding the report made by Cornell upon the three clovers.

Northampton Co., Va.

W. E. THOMAS.

The explanation of the failure of Crimson clover to improve land when grown continuously on the same field is simple. Crimson clover, like all the legumes, is a large consumer of phosphoric acid and potash. These it must have if it is to grow luxuriantly, and

thus supply nitrogen and humus for the feeding of the following crop. When first grown in the field its vigorous root system searches out and appropriates the phosphoric acid and potash in the soil, and it grows luxuriantly and supplies the following crop with food. The following years it fails to find sufficient of these foods for its healthy and luxuriant growth, and hence it fails to improve the land, but rather exhausts it. This you will find also to be the case with Red clover and all the legumes. They are nitrogen, and humus providers but phosphoric acid and potash exhausters. You can supply phosphoric acid and potash for four cents a pound. To supply nitrogen in the form of a commercial fertilizer will cost fifteen cents a pound. Give the land a dressing of acid phosphate, say, 300 pounds to the acre, and 50 pounds of muriate of potash, and it will then grow Crimson clover or Red clover, or any of the legumes, and these will get the nitrogen from the atmosphere needed to make the land capable of producing a good crop of either wheat or corn or the clover again. Possibly it may not be necessary to supply potash, as most Virginia lands have plenty of this mineral which only requires to be made available. A dressing of 25 bushels of lime to the acre will do this and also help to make the inert phosphoric acid available, and thus lessen the dressing of acid phosphate needed. We have several times previously explained this subject.—ED.

A SUGGESTION TO FARMERS.

Editor Southern Planter:

Would it not be well to devote more space in your excellent paper to the publication of authentic and reliable reports of extraordinary crop yields, particularly such as are the result of special skill and energy under otherwise ordinary or even unfavorable conditions? Would it not be well to make this a standing heading of the paper, or a regular department, and keep it always open, with a standing invitation to contributors, subscribers, and others to send in something for it? Why should not our records of this kind be as interesting to farmers and as much sought after as records in speed of horses, or with bicycle, automobile, or baseball?

Such publications need not be confined to our own sections, or our own country even, but we might well go abroad to learn in this as in other lines.

Nothing teaches, impresses or stimulates like actual achievements.

Many who are cultivating the soil have no real conception of the capabilities of production in an acre of well tilled, properly cultivated and fertilized land, or of the possible value and results of a year's labor well directed. When possible there might be added to the

record an analysis of the special conditions under which it was made, with a statement of the lessons to be learned even by those differently situated, and much more, of course, by those working in similar situations and under similar conditions.

Such a record of actual achievements, and exposition of their nature and causes, could not fail, as it seems to the writer, to be at once instructive and stimulating.

READER.

We shall be delighted to publish such reports and invite our readers to help us to make this Department a full one. Tell us of your failures as well as your successes. Often as much can be learnt from a failure as a success.—ED.

TO MAKE BOX MEASURES.

A box 24 inches long by 16 inches wide, and 28 inches deep, will contain a barrel or three bushels.

A box 24 inches long by 16 inches wide, and 14 inches deep, will contain half a barrel.

A box 16 inches square and 8 2 5 inches deep, will contain one bushel.

A box 16 inches by 8 2 5 inches square, and 8 inches deep, will contain one peck.

A box 8 inches by 8 inches square, and 4 1 5 inches deep, will contain one gallon.

A box 7 inches by 4 inches square, and 4 1 5 inches deep, will contain one quart.

A box 4 feet long, 3 feet 5 inches wide, and 2 feet 8 inches deep, will contain one ton of coal.

VIRGINIA POLYTECHNIC INSTITUTE,

(Agricultural and Mechanical College.)

We are glad to know that the term of this College just opened promises to be the most successful in its history. Already close upon 600 students have entered and more are still expected. This is a great change since the time when Dr. J. M. McBryde first took charge of the College, about ten years ago. At that time the students did not number 200, and the Faculty and buildings were barely adequate to the requirements of even that small number. Now there is a full Faculty amply large enough for even more than the large number enrolled, and the College is equipped with lecture halls, laboratories, workshops and dormitories adequate for all. The Experiment Station Farm in connection with the College has one of the finest barns in the country, a fully equipped dairy and cold storage plant, a fruit evaporating and preserving and vinegar-making manufactory, and a veterinary hospital and laboratory, whilst the different breeds of cattle, sheep and hogs are represented by choice animals. Students taking the agricultural and horticultural courses have every facility accorded them for becoming thoroughly proficient in their work. We hope to see many farmer's sons availing themselves of the opportunity and returning to the farm fully equipped for doing good work in advancing the agricultural interests of the State.

THE
Southern Planter

PUBLISHED BY
THE SOUTHERN PLANTER PUBLISHING CO'Y,
RICHMOND, VA.

ISSUED ON 1ST OF EACH MONTH.

J. F. JACKSON,
Editor and General Manager.
B. MORGAN SHEPHERD,
BUSINESS MANAGER.

TERMS FOR ADVERTISING.
Rate card furnished on application.

TERMS OF SUBSCRIPTION.

The Southern Planter is mailed to subscribers in the United States and Canada at 50c. per annum; all foreign countries and the City of Richmond, 75c.

Remittances should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.

Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.

Subscribers failing to receive their paper promptly and regularly, will confer a favor by reporting the fact at once.

The Date on your Label shows to what time your subscription is paid.

We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. Criticism of Articles, Suggestions How to Improve THE PLANTER, Descriptions of New Grains, Roots, or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

No anonymous communications or enquiries will receive attention.

Address— THE SOUTHERN PLANTER,
RICHMOND, VA.

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A Neat BINDER for your back numbers can be had for 25 cents. Address the Business Office.

PUBLISHER'S NOTES.

To Subscribers.

At this time of the year a very large number of people make selections of the magazines, journals, and newspapers which they intend to subscribe for and read during the following year. We are desirous that the *Planter* should be amongst the journals selected by all Southern farmers, as we know that from no other journal can they secure so much information that will be valuable to them. This is the testimony of hundreds of our subscribers whose letters are on file here. To secure the selection of the *Planter* in most cases only needs the suggestion of that journal by a friend. We feel that we can confidently ask our subscribers to make the suggestion to their neighbors and friends, and we now appeal to them to do this at once. In this way thousands of new subscribers can be added to our list, and each one added means giving us further help in making the journal still more useful to each individual reader. In thus helping us you are helping yourselves. Although the subscription price of the *Planter* is so small we are yet prepared to make it worth the while of our friends to help us. Send us the names and addresses of your friends whom you wish to see reading the *Planter*, and we will send them sample copies to allow you for your trouble. We are able to club the *Planter* with almost any magazine or newspaper published save the subscribers money in so doing. Tell us what you want, and we will figure what we can save you.

Binders for the Planter.

We have received a new supply of binders for the *Planter*, and shall be glad to send one holding the numbers for a year to any one sending us 25 cents in stamps or coin.

T. W. WOOD & SONS' FIELD-GROWN
HARDY ROSES

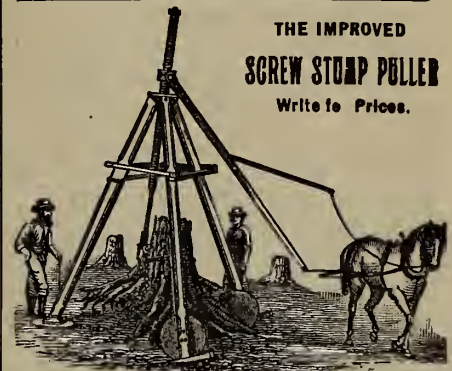
Are the best and most satisfactory Roses to plant. Set out in the fall any time up to severe freezing weather, they will give a magnificent supply of flowers next season. Roses, like trees, make root-growth during the winter, and are best set out in the fall. Write for our Special Descriptive Rose Circular, just issued, giving full information.

STRAWBERRY PLANTS.

All the best varieties. Fall planting gives much the best results as they make root growth during the winter. Our Descriptive Fall Catalogue, giving full information, mailed on request.

Cabbage, Cauliflower and Lettuce
Plants for fall setting out, now ready.

T. W. WOOD & SONS,
Seedsman, - Richmond, Va.



THE IMPROVED
SCREW STUMP PULLER
Write to Prices.

Chamberlin Mfg. Co., Olean, N. Y., U. S. A.

STUMP PULLER

Most Powerful, Handiest and Strongest Built in the World.

We make 4 kinds in sizes to suit all needs and of any desired strength. Saves time and does the work right. The operation of pulling stumps and trees by our methods is simple and easy. Send for Free Catalogue.

CHICAGO STUMP MACHINE MFG. CO.,
226 La Salle Street, Chicago, Ill.

HERCULES STUMP PULLER



Clears an acre of heavy timber land each day. Clears all stumps in a circle of 150 ft. without moving or changing machine. Strongest, most rapid working and best made.

Hercules Mfg. Co., 413 17th St., Centerville, Iowa.

There is more catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address,

F. J. CHENEY & CO., Toledo, O.
 Sold by Druggists, 75c.
 Hall's Family Pills are the best.

WITH THE ADVERTISERS.

Stock markers of all kinds are advertised by F. H. Jackson & Co., Winchester, Ky.

The Truss and Cable Fence Co. are new advertisers in this issue. Look up their advertisement and get their prices before purchasing fence.

The Bona Vista Nurseries—Chas. F. Hackett, manager—are advertising choice nursery stock—apple trees principally.

Krauser's Liquid Extract of Smoke starts the season's advertising in this issue.

Newton's Patent Dehorner is advertised by H. H. Brown & Co., Decatur, Ill.

The Geo. Ertel Co., Quincy, Ill., is offering the "Victor" Incubator to the farmers and poultrymen of this section in another column.

The "Breeder's Gazette" has a full-page advertisement in this issue. Every farmer and live stock man ought to have this paper. We can supply it along with THE SOUTHERN PLANTER for \$1.75 a year.

The Melrose Castle Farm offers Ayrshires, Berkshires and Oxforddowns.

The Chicago House-Wrecking Co. has a special offer of Gasoline Engines in this number.

The Reliable Incubator and Brooder Co. of Quincy, Ill., starts the season's advertising with an advertisement in another column.

You can buy a nice Jersey bull calf from Mr. A. L. Blair, Howardsville, Va. He has two for sale.

Send for a 1893 "Iron Age" book to the Bateman Manufacturing Co., Box 167, Grenloch, N. J. Refer to the advertisement in another column.

A great sale of Shorthorns, Polled Durhams and Aberdeen-Angus cattle will take place in Louisville, Ky., on November 13th. Look up the full-page advertisement and write to Mr. M. W. Neal for a catalogue.

The Acme Engine, made by the Rochester Machine Tool Works, is advertised regularly in our columns. If you need an engine of small power, better inquire about the Acme.

FOR RHEUMATISM—YAGER'S LINIMENT IS THE BEST.

YAGER'S
CREAM
 Applying to RHEUMATIC JOINTS
 Applying to SPAVIN
 TRADE MARK
CHOROFORM
LINIMENT
 FOR
MAN OR BEAST
POPULAR
 SOOTHING & EFFECT
QUICK HEALING POWERS.
 IN THE TREATMENT OF DISEASES REQUIRING
 AN EFFICACIOUS EXTERNAL REMEDY.
BEWARE OF IMITATIONS.
 PREPARED ONLY BY
GILBERT BROS. & CO.
 SOLE PROPRIETORS
BALTIMORE, M.D.
 U.S.A.
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YOUR DEALER WILL ORDER IT FOR YOU. 25 Cts. per Bottle.

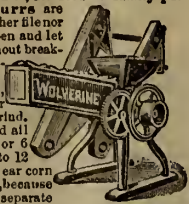
EXACT SIZE OF BOTTLE
TAKE NO SUBSTITUTE.

GRINDS EAR CORN, SHELLED CORN, OATS, RYE, BARLEY, KAFFIR CORN, ETC.

Fine or coarse, for feed or family purposes. Has shake feed. Burrs are made of white metal, so hard that neither blenor tool will touch them. They will open and let nails or hard substances through without breakage. We furnish this mill with or without crushers and elevators.

CAPACITY 10 to 45 bu. an hr., according to power used, kind of grain and fineness you grind. The only mill that grinds ear corn and all other grain successfully. With 2, 4 or 6 H. P. Made in 3 sizes for power up to 12 horse. Guaranteed to grind more ear corn than any mill made with same power, because crusher and grinding plates are on separate shafts, reducing friction. We have 40 styles of grinders, adapted to power wind mills, engines and horse powers of all sizes. We also furnish powers of all kinds for driving all kinds of machinery. Write for our Large Free Catalogue of 40,000 other articles.

MARVIN SMITH CO. 55-59 N. Jefferson Street, CHICAGO, ILL.



WITH THE ADVERTISERS—CONT'D.
A useful instrument—a farm level—is advertised by Bostrom, Brady & Co., of Atlanta, Ga.

Users of Lion Coffee can get Holiday presents in the shape of games out of each package from now until Xmas.

Ask your dealer for Frazer's Axle Grease.

Write the O. S. Kelly Co., Dept. T., Springfield, O., for a catalogue describing the Kelly Duplex Grinding Mill.

The Hard Steel Wire Fence Co. would like to mail a catalogue to any one interested in fences.

Did you ever try Yager's Sarsaparilla and Celery? Ask your druggist for it.

M. B. Rowe & Co., Fredericksburg, Va., are offering a choice lot of young Devon cows.

M. Rosenbloom & Son, Richmond, Va., conduct a regular mail order house, furnishing all kinds of household articles at low prices.

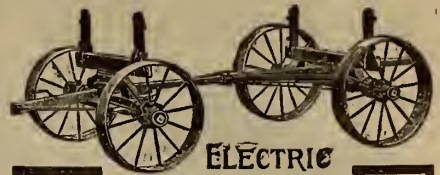
Stratton & Bragg, Petersburg, Va., are agents for some of the best known makers of farm implements and machinery in the country. The "Little Samson" Automatic Engine is one of their seasonable offers.

MAGAZINES.

In the November number, the Century marks its new year and volume by the introduction of a new type and a lighter looking page. It has a cover in colors by Adamson and adds to the range and interest of its experiments in color printing seven pictures by Maxfield Parrish, originally made in color for the series on "The Great Southwest," and which have already appeared in black and white. Apart from Mr. Parrish's artistic work, these pictures challenge attention as examples of what can be done with modern methods of color printing. They appear as frontispieces.

The article of greatest current interest is probably the first of the Century's articles on the trust, "The So-Called Beef Trust," being treated by Geo. Buchanan Fife. The aim of this series is neither to attack nor to defend the trusts, but to make accurate reports of the workings of "The Great Business Combinations of To-Day." Mr. Fife views his subject from many points of view—the packer's, the wholesaler's, the retailer's and the consumer's—and this furnishes material for both sides of the current controversy regarding the beef trade.

Two serial stories begin in this number—"The Yellow Van," by Richard Whiteing, author of that striking story, "No. 5 John Street," which is to be the long serial of the year, and has for its subject the contrasts of life in rural England between the village people and the landowners; and "A Forsaken Temple," by Anne Douglas Sedgwick, author of "The Rescue," a story in two parts, which treats of the absorbing love of one woman for another and its effect upon the marital happiness of the latter. The illustrations are by Charlotte Harding. The concluding part of Mary Adams' "Confessions of a Wife," eagerly awaited by many readers, is also given, and seven-



Handy Farm Wagons

make the work easier for both the man and team. The tires being wide they do not cut into the ground; the labor of loading is reduced many times, because of the short lift. They are equipped with our famous Electric Steel Wheel, either straight or stagger spokes. Wheels any height from 24 to 60 inches. White hickory axles, steel hounds. Guaranteed to carry 4000 lbs. Why not get started right by putting in one of these wagons. We make our steel wheels to fit any wagon. Write for the catalog. It is free.

ELECTRIC WHEEL CO., BOX 146, QUINCY, ILL.

WE'LL PAY THE FREIGHT and send 4 Huggy Wheels, Steel Tire on, \$7.25 With Rubber Tires, \$15.00. 1 mfg. wheels 2 1/2 to 4 in. tread. Top Buggies, \$28.75; Harness, \$3.50. Write for catalogue. Learn how to buy vehicles and parts direct. Wagon Umbrella FREE. W. V. BOOB, Cincinnati, O.

DEHORNER (Newton's Patent) Every **Dehorne** Guaranteed THOUSANDS IN USE. Ask your hardware dealer for them or write **M. L. BROWN MFG. CO., DECATUR, ILL.**

Take Your Choice The Convex—very simple, quick to operate. Bully V—latest and most powerful V-knife made. Sent on trial. Calif Dishover and other supplies. Send for catalog. Western orders filled from Chicago. **GEO. WEBSTER** Christiansa, Pa.

BOSTROM'S IMPROVED FARM LEVEL Pat'd 1902. WITH AND WITHOUT TELESCOPE. Is no MAKESHIFT, but the best one made for Terracing, Ditching and Drainage. Price \$5 and \$10, including Tripod and Rod. Send for descriptive circulars and Treatise on Terracing, etc., Free. **Bostrom, Brady Mfg. Co.,** 31 1/2 W. Alabama St., Atlanta, Ga.

SAVE THE FREIGHT, that is, the excess freight you will have to pay if you ship loosely baled hay. **STEAM AND HORSE POWER THE "ELI" BALING PRESS** makes tight bales that pack the car perfectly. 38 styles and sizes. All steel—lightest and strongest. Illustrated catalogue mailed free. **COLLINS FLOW CO.,** 1185 Hampshire St., QUINCY, ILL.

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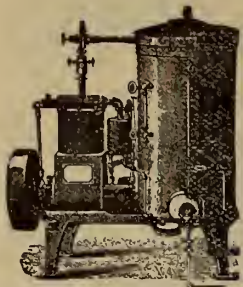
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ral short stories; a highly novel tale, "The Swartz Diamond," by E. W. Thomson, "The Echo Hunt," by David Gray, author of "Gallops," and "The Journal of a Millionaire," by Geo. Hibbard.

The life of the metropolis, so often the subject of articles in the Century, is reflected in Edwin Blorkman's paper on "The New York Police Court," picturesquely and forcibly illustrated by Blumenschein, the rising young illustrator.

The big feature of the November St. Nicholas is the first instalment of Howard Pyle's new serial, superbly illustrated by the author. In this work Mr. Pyle has attempted to do for "King Arthur" what he did for Robin Hood several years ago. This noted author-artist brings his ripest experience to this new work, and the delightfully quaint style of the text is most sympathetically and adequately supplemented by the drawings. Any boy or girl with an ounce of romance is sure to be much interested in this story, which marks the return to the serial form of publication in St. Nicholas.

The November number of Lippincott's Magazine is filled with fiction, long and short, varied enough to suit readers of all sorts and sizes. The Monthly Novellette, "The Other Man," by Frederic Reddale, is a modern romance with the spice of mystery. From the diamond fields in South Africa the story quickly shifts to high life in England. A tragedy happily averted makes a good end to a tale which shows those desirable gifts, marked originality and spirited style.

Among the shorter stories there is one by Alice Brown, who, it is said, rivals Mary Wilkins in her portrayal of New England types. In this, "The State House Platter," she is at her best.

A deliciously unique story is that called "Her Spirit Husband," by Dorothy Richardson. A young girl seeking a position answers an advertisement and learns that she is wanted to keep house in a New York apartment for a "spirit husband," while the flighty Spiritualist wife gayly disports herself at the Waldorf Hotel. There is a startling denouement.

A name prominent in the world of letters is concealed by the pseudonym "Senex" as the writer of a delightful paper entitled "A Slender Sheaf of Memories." This embodies some unpublished letters of both Thackeray and Carlyle and bristles with anecdotes of famous English literati.

Some facts about "Edgar Poe's Last Night in Richmond" are told by a native of that place, Dr. John F. Carter, whose portrait heads the article.

The soft coal smoke has evidently not dimmed the "Walnuts and Wine" department, for in the November number it shines out brighter than ever.

THE WEEKLY TIMES AND SOUTHERN PLANTER.

We beg to call attention to the change in the club rate of these two papers. We have been furnishing both for 65 cents a year. This price is now advanced to 80 cents, and all future orders must be at this price.



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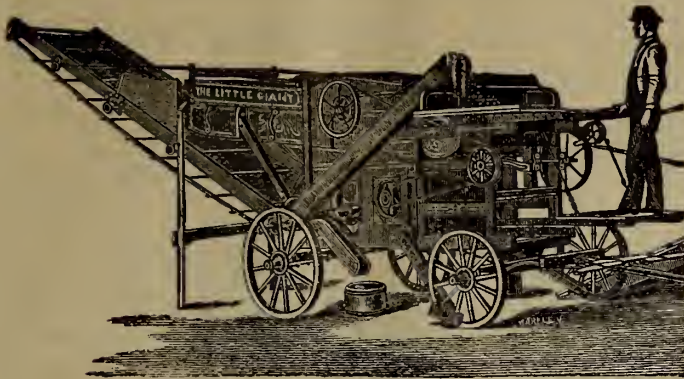
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LITTLE GIANT AND
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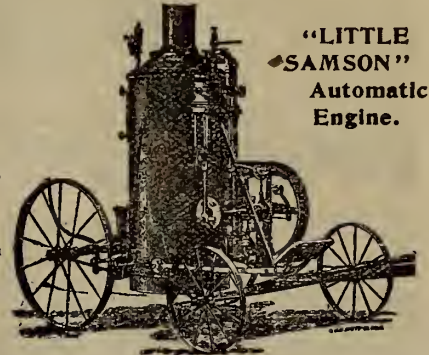
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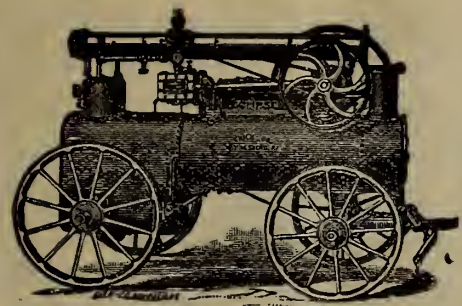
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The orchard consists of 1,500 apple and 250 pear trees, and is about 12 years old.

My herd of 40 registered Herefords are as good as can be found. Some 12 cows are due to calve in the early spring.

The residence is comparatively new; kitchen, barn, out-houses of all kinds are in good condition.

The implements, tools, wagons, plows, etc., are such as will be found on any well-directed farm.

The work and driving teams are in good condition and are splendid ones.

Owing to the death of my brother, who has managed the place, and my professional engagements here, I have determined to sell out.

If any one desires to step right in and take everything, I will sell at a bargain.

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In Bladen county, N. C. Consisting of 104 acres, 70 acres cleared and in good state of cultivation. A new five-room house, barn, stalls and gin house, 1 tenant house, 2 wells of good water, 1½ miles from steamer landing on Cape Fear river. Convenient to church and school; healthy and good neighborhood; 34 acres of native timber. Price, \$1,000. Must sell at once. Address

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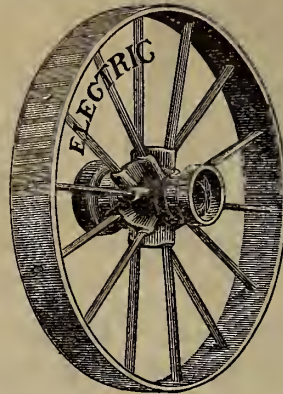
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wheel Handy Wagon made by the Electric Wheel Company, of Quincy, Illinois. This wagon at all times is one of the most convenient and useful articles a man could have on the farm. Is particularly useful in getting in the fodder and other late fall work. Most of our readers who have used this wagon are profuse in their praises of it. Some say they would not be without a handy wagon for three times what it cost.

Those of our readers who do not feel that they wish to make the necessary outlay to buy one of these wagons at the present time may have a low down broad wagon by simply buying a set of the Electric Wheels such as are shown in the cut. They are made in great variety of heights, and are made to fit any wagon. The simple removing of the old high wheels and substituting a set of the Electric's makes a handy, convenient, low down wagon at a very small item of cost.

We suggest that you get one of their free catalogues, and see if their proposition does not impress you as being a particularly good one at this time of year. Write for the catalogue to-day.

DELOACH SAW MILLS.

Elsewhere in this issue will be found the advertisement of the DeLoach Mill Manufacturing Co. of Atlanta, Ga. This firm, as is well known to numbers of our readers, is among the leaders in the manufacture of saw mills and mill machinery in this country. They sustained a great loss during the past summer by having their entire plant destroyed by fire. That they lost no time from business and only delayed orders for a very short time, is remarkable. An extract from a recent letter informs us that their new plant is about completed, and is the finest in the country. The capacity of the plant is two hundred saw mills per month, exclusive of their side lines, consisting of shingle mills, planers, corn and buhr mills, etc. Among their specialties is the farmers' saw mill mentioned in this advertisement. They are having a great sale for it, and if you are interested in a good mill, write for circulars, prices, etc.

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no matter where it is. Send description, state price and learn how. Est. '96. Highest references. Offices in 14 cities. W. M. Ostrander, 1885 N. A. Bldg., Philadelphia

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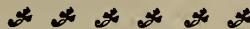
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Save agent's commission by sending your order to the nursery.

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We did not have a complaint last season. Every tree is perfect and guaranteed, taken from the nursery block the day it is shipped, carefully packed.

Our prices are the lowest.

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CABBAGE and LETTUCE PLANTS.

\$1.50 per 1,000, 25 cents for 100, by express. Ready to plant out now. Varieties: Charleston, Succession and Early Jersey Wakefield.

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Who has not heard of the Lehman heater? The man who uses during the winter an open buggy or a closed carriage can make himself comfortable by its use. The cold weather is now about to visit us, and the demand for some handy and un-cumbersome appliance to obviate the frigidity of the northern climate is apparent, and the less cumbersome and more useful the article the more acceptable it is. This achievement has been reached by the Lehman heater. It takes up but little room; is always ready and for two cents will keep a carriage warm for twelve hours in the depth of winter.

Twenty years ago the bulk of the people slept in a cold room, waking and dressing in it, and went forth into a practically cold house, breakfast being generally over before the inadequate furnace arrangement of those days sent heat through all the house or apartment. The consequence was that injury to health ensued. As above stated, the Lehman heater fills the bill. It should be more generally known. It is made in the solid est fashion, and should be in the hands of every man who uses a horse conveyance.

There are 175,000 in use by horsemen, etc., who speak very highly of them. You cannot enjoy your ride in cold weather without one. Don't fail to write for circular and price list to Lehman Bros., manufacturers, 10 Bond street, New York, mentioning *The Southern Planter* when so doing.

OF VALUE TO HORSEMEN.

Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam, applied as per directions, just as you are turning the horse out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

A charming story for girls in the November St. Nicholas is entitled "Where the Surprise Came In." Charlotte Sedgwick, the author, tells a story of a cooking club which became so proficient that the members decided to prepare a dinner and invite their boy friends. It happened that one boy was a favorite, and each girl, unknown to the other, invited the same lad. What came of it all makes up a very laughable and entertaining tale.

Mention the *Southern Planter* when writing advertisers.

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The blood is life. While it retains its natural purity, this speed is maintained and its vitalizing power is continued. But impurities enter into it. The blood gets draggy. It refuses to perform its work. Rheumatism, nervousness, dyspepsia, scrofula and a host of other diseases are the result. The blood needs cleansing.

In other days they cleansed the blood by drawing it from the body. Blood letting was a common occurrence. To day YAGER'S SARSAPARILLA WITH CELERY does the work. Its medicinal merit is one of the triumphs of modern methods. It combines the value of the two most helpful drugs in the pharmaceutical list. By direct and indirect action it renovates the functions of the body and puts them in the proper condition to do the work intended by nature.

It is invaluable for young or old. Mrs. C. R. Tyler, of Lisbon, Va., says:

"I take pleasure in recommending to the public YAGER'S SARSAPARILLA WITH CELERY. My husband and little daughter have both taken it with best results. Our little two year old girl is especially benefitted; everybody that sees her has something to say about the way she has improved, and I hope every body that has sick children will give it a trial."

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Honey-Tolu will positively cure the most stubborn cough or cold if taken according to directions.

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is harmless—the most delicate invalid or child can take it with perfect safety. Invaluable for all affections of the throat and lungs.

All druggists, 25c. a bottle.

Made by Gilbert Bros. & Co
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If your merchant does not have them in stock, ask him to order for you

**GLEASON'S
HORSE AND CATTLE
POWDER.**

YOU NEED IT FOR YOUR HORSES, ETC.



**SILVER LACED
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Choice purebred specimens of either sex, \$1 each, in any quantity. Eggs in season.

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200 Purebred BARRED P. R. COCKERELS and PULLETS

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**BROWN LEGHORNS
(Single Comb.)**

Some fine, vigorous, farm-raised cockerels that will please you, for sale. Only \$1.00 each.

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Pure MAMMOTH BRONZE TURKEYS, TOULOUSE GEESSE, BARRED PLYMOUTH ROCK CHICKENS, GUINEAS AND PEA FOWLS; Eggs in season except from Pea Fowls and Geese.

Enclose stamp for reply.

Mrs W. F. JACKSON, - Olga, Amelia Co., Va

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—FOR SALE—

PURE WHITE HOLLAND TURKEYS.

Early spring birds. Toms, \$3.50, Hens, \$2.50, Trios, \$7.50.

E. I. COOKE, - Ware Neck, Va

BUFF ROCKS and R. G. BROWN LEGHORNS,

\$1.00 each. INDIAN PEACH TREES, Red to the seed, 25cts. each.

A. F. BONHAM, - CHILHOWIE, VA.

FOR SALE, CHEAP

Some well bred BRONZE TOMS and HENS at a bargain. Address

DUCK and POULTRY DEPT, Walter P. Laird, Supt. Fair Oaks Farm, Spray, N. C.

COLLIE PUPS!

By prize-winning imported sires and trained dams. Eligible. Fit for bench, ranch or farm. Price, \$10, either sex. Also a book on the care and training of the Collie for all practical uses. Price, 50c. Copy of book free to purchaser of Collie.

Stock Farm, "MAPLEMONT," Albany, Ver.

GO SOUTH.

For full particulars write A. JEFFERS, Norfolk, Va.

CHEAP PAINT.

It is notorious among paint manufacturers that in some parts of the country no paint can be poor enough to fail of acceptance. The only quality regarded is color. If the hues be bright and attractive, no matter how poor the material, it will "go," and the best material will not "go," if anything cheaper is offered.

Now this is a reversal of all paint logic. It is very important that paint shall beautify one's house, but still more important that it shall protect the structure from the weather. The judicious man selects his paint, first, with regard to its protective value; second, with a view to its beautifying effect; and third, in consideration of economy.

Nothing can be more beautiful than some of the aniline dyes, but they don't protect, and in the measure that a paint protects it is economical, and when paint ceases to protect, no matter what its appearance, is usefulness has ended.

Test any painted surface by moistening it with water; if the water remain on the surface, the paint is still serviceable; if it is absorbed, the paint has outlived its usefulness.

It is this quality of shedding water indefinitely that gives to zinc its unique value as a paint material. Paint containing a goodly proportion of zinc white never becomes absorbent, wherefore, so long as it endures its usefulness remains. Chalking has some advantages in the eyes of the painter, who doesn't think paint should last too long, but from the standpoint of the man who pays the bills, a paint cannot last too long if it continues to protect his property as long as it lasts. STANTON DUDLEY.

The November St. Nicholas must appeal especially to the boys. It contains a profusely illustrated article on "A Trip Through the New York Navy Yard" by Joseph Henry Adams. "Baby Elton the Quarter-Back," by Leslie W. Quirk, is a timely story of college and foot ball, in which one of the players is suddenly afflicted with a sprained ankle "accidentally on purpose" in the middle of a game in order that "Baby Elton" may have a chance to show his prowess. How well he acquits himself is the interesting part of the story.

SALE OF LIVE STOCK.

The Kentucky Live Stock Breeders Association will hold its Second Annual Sale at Louisville, Ky., on November 13. The offerings at this sale will be 100 head of beef cattle, consisting of Shorthorns, Aberdeen-Angus and Polled Durhams. The contributors to the sale are all well known Kentucky breeders, whose name is a guarantee that the animals of the respective breeds will be exceedingly choice, both as to breeding and individuality. Look up the advertisement, and write to Mr. M. W. Neal, Secretary, 514 3rd street, Louisville, Ky., for catalogues, which are now ready.

YAGER'S LINIMENT.

In case of accidents, a bottle of Yager's Liniment should be handy. Good for man and beast.

Warranted to give satisfaction.



**GOMBAULT'S
CAUSTIC BALSAM**

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

USE FOUTZ'S HORSE AND CATTLE POWDER

A medicine which makes sick animals well, the diseased whole, the weak strong and the thin fat. It will restore lost Appetite, expel Worms and cure Chronic Cough, Heaves, Influenza, Distemper, Hide-bound, Indigestion, Constipation, Flatulency and all Stomach and Bowel trouble.

The finest of all animal vitalizers and tonics and the only one which increases the coefficient of digestibility of protein.

PRICE PER PACKAGE

5 PKGS. \$1.00
12 PKGS. \$2.00
CHARGES PAID.

Get the Genuine or send to us. Pamphlet No. 6 Free. Sold by All Dealers.

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DEATH TO HEAVES Guaranteed

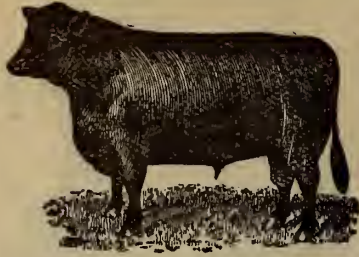
Newton's Heave, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strongly recommended. \$1 per can. Dealers, mail or Ex. paid. Newton Horse Remedy Co. (T) Toledo, Ohio.

V. P. I. Farm Bulletin

Nice BERKSHIRE PIGS for sale now. Also a fine DORSET RAM LAMBS left.

D. O. NOURSE, Prof. of Agr. Blacksburg, Va.

FINE STOCK AT A BARGAIN.



One trotting bred brown gelding, coming 4 yrs. old, 15½ hands, weight 1000. Trim as a fawn, and dashing in style and action. Can negotiate a mile in 3 minutes under the lines without effort. His future is big with promise. Sinevy, hardy and tough. With just a bit more of age and service will make a model family horse. On any city market he would go "like hot cakes" at \$200. To sell at once we will take \$150.

One fine, three-year-old family milch cow. Gentle and fresh to pail. Price, \$30.

Nine head beautiful, reg. Angora Goats: One Buck; Price, \$20. Six Does; Price, \$12 each. Two Buck Kids; Price, \$10 each. Lump price of nine goats, \$100.

Two fine, reg. Dorset Ewe lambs, about 1 yr. old. Price, \$10, each.

One fine, 4-yr.-old Dorset Ram, very large; he is a prize winner. Price, \$20.

Address **W. M. WATKINS & SONS,**
Cottage Valley Stock Farm,
Randolph, Charlotte Co., Va.

ABERDEEN-ANGUS

Bull calves, \$40 to \$60, heifers 5 to 7 mos. old, \$75.
Limited quantity

NEW SIBERIAN MILLET

Seed at \$1.50 per bus.; this millet will produce a crop of seed and a fair quality of hay at the same time. It is fully two weeks earlier than the German millet, of finer quality, but will not yield quite as much.

C. E. JONES, Carysbrook, Va.

ANGUS BULL CALVES

Registered and unrecorded. Stock first-class, and breeding the best.

SHROPSHIRE SHEEP

First class yearling rams, and ewes of all ages. Several FINE FARMS for sale.

WARREN RICE, - Winchester, Va.

..OAK HILL FARM..

Holstein and Jersey Cattle,
Biltmore Berkshires.

Wishing to reduce my stock, will sell cheap every thing from Oak Hill Farm is guaranteed first-class, and as represented. Address

Oak Hill Station **SAM'L HAIRSTON,**
on the Farm. **Wenona, Va.**

WATER CLOSET COMBINATIONS,

Porcelain Bowl, Hardwood Seat and Tank, Nickel Plated flush and supply pipes, complete, each \$11.00.

Cast Iron Roll Rim Bath Tubs, length 5 ft. Complete with full set of nickel plated fittings, each, \$11.00.

They are new goods, ask for free catalogue No. 166 on plumbing and building material.

Chicago House Wrecking Co., W. 35th and Iron Sts., Chicago

REPORTS.

U. S. Department of Agriculture, Washington, D. C. Bureau of Animal Industry. The Dairy Industry and Dairy Markets in Porto Rico.

Section of Foreign Markets. Bulletin 29. Distribution of Agricultural Exports of the United States, 1897-1901.

Weather Bureau. Proceedings of the Second Convention of Weather Bureau Officials, August 27, 28, and 29, 1901.

Farmers' Bulletin 156. The Home Vineyard, with special reference to Northern Conditions.

Crop Reporter, October, 1902.

Arizona Experiment Station, Tucson, Ari. Bulletin 44. The River Irrigating Waters of Arizona. Their Character and Effects.

Colorado Experiment Station, Fort Collins Col. Bulletin 72. The Ground Water.

Bulletin 73. The Feeding Value of Beet Pulp. Feeding Beet Pulp and Sugar Beets to Cows.

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Columbus, Ohio. Journal of Horticultural Society, September, 1902.

Kansas Experiment Station, Manhattan, Kan. Bulletin 111. Quality in Beef.

Bulletin 113. Baby Beef.

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Bulletin 85. Alfalfa for Maryland.

New Hampshire Experiment Station, Durham, N. H. Bulletin 92. Silage Studies.

New Mexico Experiment Station, Mesilla Park, N. M. Bulletin 42. Alkali.

Bulletin 43. Drainage and Flooding for the Removal of Alkali.

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Imperial Department of Agriculture, Barbadoes, West Indies. Agricultural News, September 27, October 11, 1902.

CENSUS BULLETINS.

210a Manufactures. Chemicals and Allied Products. (Errata.)

224. Manufactures. The Localization of Industries.

245. Manufactures. Electrical Apparatus and Supplies.

246. Manufactures. Iron and Steel.

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SECOND LARGEST

JERSEY HERD

IN AMERICA. FOUNDED 1882.

BULL CALVES, and for the first time, Heifers bred to Imported Golden Peter, and Heifer Calves and a few aged Cows.

BERKSHIRES, all ages, sired by Imported Storm King, or Imported Esau 2nd, Size, good shape and large litters.

Visitors welcome. Address for Book of The Farm, or prices

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Swift Creek Stock and Dairy Farm



Has for sale a large number of nice young registered A. J. C. C.

JERSEY BULLS
AND HEIFERS.

None better bred in the South. Combining closely the most noted and up-to-date blood in America. Bulls 10 to 12 months old, \$25.00. Heifers, same age, \$35.00. POLAND-CHINA PIGS, \$5.00 each. Send check and get what you want.

T. P. BRASWELL, Prop., Battleboro, N. C.

FOR SALE.

1 pure-bred JERSEY COW, in milk, 5 yrs. old. Price, \$50.

1 pure-bred JERSEY CALF, 4 months old. Price, \$25.

2 half-bred RED POLL HEIFERS, age, 15 mos. 2 half-bred RED POLL BULLS, aged 10 and 5 mos. Price, \$15 and \$25 respectively.

2 STANDARD TROTTER STUD COLTS, aged, 14 and 4 mos., also

20 Pure-bred B. P. R. COCKERELS, 75c. each.

M. E. ANDREWS, Hurt, Va.

2 JERSEY BULL CALVES

Eligible for registry, FOR SALE.
Prices reasonable.

A. L. BLAIR, - Howardsville, Va.

FOR SALE!

Purebred POLAND-CHINA PIGS of the best prize-winning families.

RED POLLED CATTLE, some good ones that show 100 lbs. for each month they have lived.

A few choice purebred SHROPSHIRE SHEEP.

MAMMOTH BRONZE TURKEYS from prize-winners at Madison Square Garden show.

MAMMOTH PEKIN DUCKS from prize-winners at Madison Square Garden and Philadelphia.

Raised over 500 chickens this year, and will sell some fine young BARRED PLYMOUTH ROCKS at 75 cts. each, if sold in next 30 days, and in lots of not less than three.

ARROWHEAD STOCK FARM,

Sam'l. B. Woods, Prop. Charlottesville, Va.

JACKS
FOR SALE.

1 to 6 yrs. old. Fine Jacks a specialty. Write for what you want.

W. E. KNIGHT & CO.,
Nashville, Tenn.

HEREFORDS.



BERKSHIRES.

Young stock for sale at all times.
Information and terms upon application.

EDW. G. BUTLER, ANNEFIELD FARMS,
BRIGGS, CLARKE CO., VA.

POLAND-CHINA

Pigs, eligible to registration, 8 weeks
old, \$5.00.

HEREFORDS,

Grade calves, either sex, \$25 00.

J. C. GRAVES, Barboursville,
Orange County, Va.

POLAND-CHINAS

Closely related to such famous hogs as
Anderson's Model, Model of 97 and
Hands Off. Pigs, boars, gilts and bred-
sows for sale. Also some good SHORT-
HORN bullock calves and SHROPSHIRE sheep.
Stock guaranteed as represented or
money refunded.

J. F. DURRETTE. - Birdwood, Albemarle Co., Va.

Berkshire Pigs

I have a few young pigs for sale. Thoroughbred stock. Eligible to registry. Baltimore strain. Prices quoted on request.

HENRY W. WOOD,
Hollybrook Farm, Richmond, Va.

Large ENGLISH BERKSHIRES

M. B. TURKEYS Very Fine.

B. P. R. Chicken Eggs in season.

HAWKSLEY STOCK FARM,
J. T. OLIVER, Allen's Level, Va.

..ESSEX PIGS..



Some extra fine pigs, 8 to 10 weeks old, \$10 per pair. All stock offered is eligible to registry. Southdown sheep, spring lambs and yearling ewes for sale. Prices on application.

L. G. JONES, BETHANIA, N. C.

THOROUGHbred

O. I. C. PIGS

FOR SALE. Prices Right.

F. S. MICHIE, CHARLOTTESVILLE, VA.

ANNOUNCEMENT.

SUNNY HOME HERD OF ABERDEEN ANGUS CATTLE.

The majority of the females of this herd were brought from Huron county, Ohio (March 1st, 1901), where the herd was founded several years ago by selections from the great herds of J. P. and D. N. Hine, pioneer breeders of Angus in Ohio, Anderson & Findlay, Lake Forest, Ill. (oldest and most extensive breeders of Angus in America), and Hon. M. H. Cochran, of Quebec.

These females are sired by the following famous bulls: Gay Blackbird, Columbian winner, and sire of more great herd bulls than any other bull in this country; Ermoor, the great Erica Sire, son of Royal Erie—greatest sire of high priced females on this continent; Eulalie's Erie, 2d prize yearling bull at World's Fair, Chicago, son of Heather Lad 2d, one of the most famous bulls of the breed; Baron Ida, three times a champion at State Fairs, third prize in his old age at Pan-American; Beau Bill, champion at four Western State Fairs for two years; Dark Prince, by Allblack, the sire of Black Monarch of Emerson, sire of the highest priced female ever sold in America (Black Cap Judy sold at \$6,800); Eulalie's Laddie, in use for the past two years, is proving that "good blood breeds on."

Every animal sold from this herd carries with it a strict guarantee of productiveness.

Every animal shown at Raleigh Fair, Jan., 1901, received a first prize, and Miss Stubbs (by Dark Prince) was champion beef heifer of any breed. See advertisement.

THEODORE ROOSEVELT ON "THE PRESIDENCY."

Before his nomination for the Vice-Presidency, Theodore Roosevelt wrote expressly for The Youth's Companion an article on "The Presidency." It will be published in the number for November 6th, this being one of the remaining weekly issues of 1902 sent free from the time of subscription to every new subscriber who at once sends \$1.75 for The Companion's 1903 volume. When this article on "The Presidency" was written no one could have foreseen, or dreamed even, that its author would so soon be called upon to take up the duties of the great office. For this reason alone, what Mr. Roosevelt has to say possesses extraordinary interest, and will be eagerly awaited by persons of all shades of political opinion.

A twenty eight page Prospectus of the 1903 volume of The Youth's Companion and samples of the paper will be sent free to any one. Address 144 Berkeley street, Boston, Mass.

MAKE YOUR COWS BREED.

The Dairy Association of Lyndonville, Vt., are advertising a preparation called "Kow-Kure," which is recommended to bring cows in heat. They would like to send a pamphlet to any one interested.

To make cows pay, use Sharples Cream Separators, Book "Business Dairying" & Cat. 305 free. W. Chester, Pa.



BY USING KOW-KURE THE GREAT COW MEDICINE

Watch every cow and at the first sign of disorder in appetite, digestion or flow of milk, give a dose of KOW-KURE. Carefully follow the directions as given on the box and that cow will get well.

KOW-KURE is in powder form, to be given in regular feed. It cures abortion, barrenness and scours, removes retained afterbirth and caked udder, strengthens the appetite, purifies the blood, vitalizes the nerves and prevents disease. It increases the milk. It is a medicine for cows only, made by the

DAIRY ASSOCIATION, LYNDONVILLE, VT.

HUNTVILLE, N. J. Jan. 20, 1902.

DAIRY ASSOCIATION, LYNDONVILLE, VT.

Dear Sirs:—After having used your Kow-Kure for the past 18 months in our dairy of 60 head of cattle, I must say that it is the greatest cow medicine on earth. It does what you claim for it, if used as directed. Before using it I was discouraged with abortion and afterbirth and other complaints. Since using Kow-Kure I have not been troubled with any of these diseases, and money wouldn't hire me to live without it in the barn, ready for use.

Respectfully,

WM. V. PIERCE,
Mgr. Chapel Road Dairy Farm.

ELLERSLIE FARM

Thoroughbred Horses AND SHORTHORN CATTLE,

Pure Southdown Sheep and Berkshire Pigs.

FOR SALE. R. J. HANCOCK & SON,
CHARLOTTESVILLE, VA.

EAST RIVER SIDE SHORTHORNS.

Choice bull and heifer calves for sale. Will make price very low for next 60 days.

JAMES F. CLEMMER, Summerdean, Va.

Ayrshires, Berkshires and Oxford-Downs.

Ayrshire calves of both sexes, Berkshire pigs and boar, and 2 Oxford-Down rams for sale. MELROSE CASTLE FARM,
Enos H. Hess, Mgr., Casanova, Va.

The EGGS
 which some coffee roasters use to glaze their coffee with—would you eat that kind of eggs? Then why drink them?
Lion Coffee
 has no coating of storage eggs, glue, etc. It's coffee—pure, unadulterated, fresh, strong and of delightful flavor and aroma.
 Uniform quality and freshness are insured by the sealed package.

"BRED-IN-THE-PURPLE."

DUNTREATH BERKSHIRES

FOR SALE,

Two sows and two boars (same litter), three months old on 6th—VERY CHOICE, also two sows and one boar (same litter), six weeks old on 15th Nov., all eligible to registry.

NONE BETTER IN AMERICA.

DUNTREATH FARMS, P. O. Box 666, Richmond, Va.

WOODLAND FARM DORSETS.

Virginia has a good many of our Dorsets, and we note our old customers writing for more. That's because we send out only good ones.

Joseph E. and Willis O. Wing,
 Mechanicsburg, Ohio.

THOROUGHbred

SHROPSHIRE BUCKS

For Sale. ONE IMPORTED BUCK, 2 yrs. old, YEARLING and several LAMBS at farmers' prices.

Apply to MANAGER,
 ANTRIM STOCK FARM, Warrenton, Va.

MARK YOUR STOCK.

Use the

KENTUCKY ALUMINUM EAR LABEL.

Made by F. H. JACKSON & Co., Winchester, Ky. Write to them for free samples.

ANGORA GOATS are handsome, hardy and profitable. For large circular address E. W. COLE & CO., Kenton, Ohio.

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 Crop Feeding"**

BY PROF. W. F. MASSEY.

383 Pp. Cloth, \$1.00; Paper, 50c.

We offer this splendid work in connection with the *Southern Planter* at the following prices:

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A treatise on the art of Cider and Vinegar making as an industry, embracing formulas for the manufacture of cider, vinegar and other fruit wines. By W. D. Carlisle, Royal Orchards, Afton, Va. This little pamphlet will be found useful to orchardists in enabling them to utilize their waste products.

Triple Extract of "Sarsol" Fluid. Specific for destroying ticks and preservative against the Texas fever. L. Dela Torre, Hotel Lafayette Brevorst, Fifth Avenue and Eighth street, New York. If what is stated in this pamphlet is borne out in practice, this fluid will be found a valuable acquisition in Southside Virginia and North and South Carolina. It is said to be largely used in South America.

CATALOGUES.

Zenoleum. Zenner Disinfectant Co., Detroit, Mich. Piggies troubles and their treatment from a scientific standpoint.

Pinehurst Nurseries, Pinehurst, N. C. North Carolina Woody and Herbaceous Plants and other Ornamentals.

Premium List of the Virginia Poultry and Pet Stock Association and Virginia Bench Show, November 24-29, 1902.

The Glucose Sugar Refining Co., The Rookery, Chicago. "Feed Your Stock for Best Results." This catalogue points out the value of gluten feeds.

The McSherry Manufacturing Co., Middletown, Ohio. How to Grow Pedigree Wheat. Suggestions for Bettering and Improving of Crop Conditions.

PAGE WOVEN WIRE FENCE.

In a recent letter from the Page Woven Wire Fence Company, of Adrian, Mich., they say:

"We were never so well equipped as at present to furnish Page Fences. Having our own steel, rod and wire mills, and having very largely increased our weaving capacity; with about 1,400 employees on our pay-roll, converting the iron into high carbon steel, the steel into ingots, blooms, billets, rods and wire, and with double the number of looms that we had January 1st, 1900, we feel that we are in pretty good shape to supply the demand for 1903.

"We make a standard style of fencing for every farm, poultry, stock or railroad requirement; use double-strength horizontal wires in all these styles, coil or spiral every one of them from end to end the whole length of the fence, thus providing for expansion and contraction, and Page-Wire will retain this coiled shape even after it has been drawn out straight a thousand times.

"No locks, staples or other devices are used to hold the horizontal and cross-bars together, because Page Fence is a real woven wire fence. Horizontals and cross-bars woven together is all there is of it."

Their advertisement appears regularly in our columns, and if you have not yet investigated the merits of their fencing, you should write for catalogue, descriptive matter and prices now.

HONEY TOLU

Will cure that cough or cold. Try it.

Our Clubbing List.

The following list of papers and periodicals are the most popular ones in this section. We can SAVE YOU MONEY on whatever journal you wish.

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Subscribers whose time does not expire until later can take advantage of our club rates, and have their subscription advanced one year from date of expiration of their subscription to either the *Planter* or any of the other publications mentioned.

Don't hesitate to write us for any information desired; we will cheerfully answer any correspondence.

We furnish no sample copies of other periodicals.

No. 1 Iron Age Double and Single Wheel Hoe.

No. 6 Iron Age Combined Double and Single Wheel Hoe, Hill and Drill Seeder.

No. 1 Iron Age Combined Harrow and Cultivator.

Improved-Robbins Potato Planter.

Look for the full name IRON AGE branded on the tool.

Don't be imposed upon by dealers selling implements made in imitation of the famous Iron Age brand. All the **IRON AGE** tools are **MARKED WITH THE FULL NAME**. The name is for your protection. It is a guarantee of best materials, best ideas, best workmanship, and all the merits that have made Iron Age tools popular with three generations of farmers and gardeners. Write for a **FREE** copy of the **IRON AGE BOOK for 1903**, telling all about these marvelous labor savers, and giving prices on Cultivators, Horse Hoes, Seed Drills, Wheel Hoes, Riding Cultivators, the Improved-Robbins Potato Planter, &c.

BATEMAN MFG. CO., Box 167, Grenloch, N. J.

No. 6 Iron Age Horse Hoe and Cultivator.

HIGH CLASS FEED MILLS.
 Whoever is so fortunate as to get a copy of the catalogue issued by Sprout, Walvron & Co., of Muncy, Pa., will find in it a number of machines out of which the farmers will reap profit. These people have thoroughly mastered the farmer's needs, and surely have mill-making down to a science. The catalogue cannot even be glanced over without seeing that their feed mills have the most perfect adaptability, and that the patterns and make are of exceptionally high character. They have been some thirty years in the business. Their mills covering everything from the first roller process patent flouring mills down, are found in all sections of the country. Their most marked point of excellence, and the one which is of vital interest to the readers of this journal, is their celebrated line of mills for crushing and grinding ear corn, shelled corn, oats, rye, barley, spices for feed, and the making of family meals, mixed chaff, etc. This latter class of mills, stands in such high repute everywhere that the manufacturers feel they are taking but few chances when they send them out, as is their custom on fifteen days' trial, allowing purchasers time and opportunity to test thoroughly on their own premises before closing contract. Their mills and the plan of selling should attract the attention of every farmer who grinds feeds. Their advertisement is found elsewhere in this journal. If you are interested, look it up and write for the company's catalogue.

NOT AN ILLOGICAL CONCLUSION.
 An enterprising clothing merchant had advertised on every board fence in his neighborhood: "Unsurpassed Clothing! Money back without Argument" This is what recently occurred:
 "I was here a year ago and bought a suit of clothes. They are about worn out."
 "Yes," replied the merchant very affably.
 "And now I've come to get my money back without argument."
 "Get your money back?"
 "Yes."
 "Didn't you wear the suit a whole year? What do you want your money back for?"
 "To get another suit of clothes."—X. Y. Z. in November Lippincott's.

HOLSTEINS and DORSETS.

Two young cows, one to be fresh in December, other in the spring. Two heifers, one year old. One bull calf, four months old.

FOUR DORSET RAMS

Rams sired by an Imported Buck. Address

T. O. SANDY, Burkeville, Virginia.

Norfolk and Western and Southern R. R.

DEVON COWS....

Ten young DEVON COWS, thoroughbreds and high-grades with Calves by their sides. Want to sell them during this month. Can be seen if day's notice is given. Also JERSEY CATTLE and several YOUNG GUERNSEY BULLS. BERKSHIRE PIGS not akin. Several young BOARS ready for service.

M. B. ROWE & CO., Fredericksburg, Va.

* VIRGINIA DIVISION. *

Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.
 Insures, against Fire and Lightning, only country property—no stores or unsafe risks. Average cost per year for three years has been \$3.66 per \$1000, including dwellings, barns, produce, &c.,—about one-third the usual cost of insurance to farmers. Amount of property insured \$325,000. Estimated security in real and other estate, \$600,000.
 For further information, address,
CHAS. N. FRIEND, General Agent, CHESTER, VIRGINIA.
 MENTION THIS JOURNAL.

Don't erect another rod of fence until you investigate the **Truss and Cable Wire Board Fence.**
 It is stronger, lasts longer and costs less than any other. One man can build it. Six wires in every strand. Perfect provision for contraction and expansion. Sold direct from factory at wholesale prices. Agents wanted. Sample free.
THE TRUSS & CABLE FENCE COMPANY,
 329 Federal Building, Youngstown, Ohio.

TREAD POWERS.

For a thoroughly good, reliable power, for use on the farm; one which is ever ready for use and which is readily adaptable to all conditions and all kinds of work, and one which will generate and maintain power at the least possible cost, Heebner's Level-Tread Horse Powers are recommended. These are advertised elsewhere in these columns, and are manufactured by Heebner & Sons, Lansdale, Penna. Multiplied thousands of these powers are in use in all parts of this country and are giving perfect satisfaction. One should not express surprise at this happy condition of affairs, however, when it is known that these people have been making their special line of machines for more than sixty years. In addition to Tread Powers, the Heebners also make the renowned Little Giant and Pennsylvania Threshers and Cleaners, Union Feed and Ensilage Cutters, Feed Grinders, etc. Everything they make is sold under a guaranty and fully warranted. Write them for catalogue and kindly mention the paper in writing.

GLEASON'S HORSE AND CATTLE POWDER.

Messrs. Gilbert Bros. & Co. of Baltimore, Md., are advertising this well-known preparation in another column. For keeping stock in good condition, they claim it is the best powder on the market. If you have not tried it, do so. It is sold on the guarantee that if used as directed, it will accomplish what is claimed for it. Your merchant or druggist handles it.

PURE BRED PERCHERONS.

Editor Southern Planter:

I invaded the State of Maryland, and showed ten head of pure-bred Percherons including sucklings at Hagerstown and Frederick, where I won 16 premiums, 14 firsts and two seconds. I think I will go to Ohio and Pennsylvania next fall with a herd of Shorthorns and a car-load of Percherons. We must show the States that old Virginia, while away down alphabetically in the list of States, she is away up in fine stock.

Yours truly,

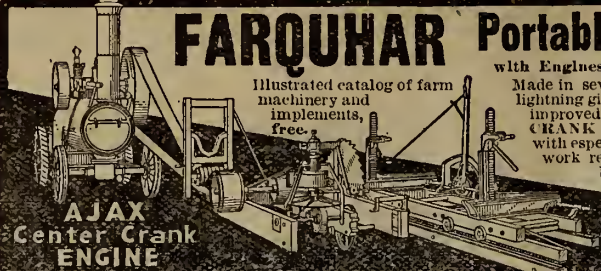
JNO. F. LEWIS.

Lynnwood Stock Farm, Oct. 26, 1902.

SHORT COURSE OF PRACTICAL INSTRUCTION IN AGRICULTURE, HORTICULTURE, DAIRYING, &C.

The University of Tennessee offers a short course from January 2nd to March 14, 1903, in Agriculture, Horticulture, Dairying, &c., which will be found to be of the greatest service to young farmers, and those intending to be farmers. To take this course, which runs over ten weeks, need not cost more than \$40, exclusive of railroad fare. The student gets the advantage of the splendid equipment and able staff of the College. Tuition is free. The only expense is the board and a small incidental fee of \$7 and \$2 for syllabus of lectures. This is an opportunity which should be largely availed of.

Mention the *Southern Planter* when corresponding with advertisers.



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Illustrated catalog of farm machinery and implements, free.

AJAX
Center Crank
ENGINE

with Engines and Boilers Complete.
Made in seven sizes, friction feed, cable lightning gig, patent chain set works and improved dogs. **AJAX CENTER CRANK ENGINES** are constructed with especial reference to the peculiar work required of them. This combination of engine and mill makes the best sawmill outfit on earth.

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Bred from high-testing Jersey Cows a specialty.

We have more high-testing St. Lambert Cows than can be found in any herd in America.

INDIAN GAMES—The King of table fowls.

WHITE WYANDOTTES—The best general-purpose fowl.

WHITE LEGHORNS—The greatest of all egg producers.

Address

BOWMONT FARMS, SALBIA, VA.

SIR JOHN BULL'S PIGS.

All testify to his prepotency, nor is

UNCLE SAM

Unlike him in strong points of transmission or reproduction.



Every pig I ship has individual merit, aside from the purest English strain of LARGE BERKSHIRES that I could import from the most famous breeder in England.

LET ME HAVE YOUR ORDERS PROMPTLY FOR FALL SHIPMENT, at Farmers' Prices.

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A FEW BULL CALVES FOR SALE**

From cows making 300 to 360 pounds butter-fat each milking period. Milk is weighed EVERY milking and tested frequently, so we KNOW what we say.

BERKSHIRES

Of the best Hood Farm and Biltmore strains.

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FOREST HOME FARM. - - - PURCELLVILLE, VA.

THE OAKS. 6 SHORTHORN BULL CALVES,

(Eligible to registry) FOR SALE; Also 4 Grades.

100 high-grade SHROPSHIRE EWES; good ones, and some of them bred. I never offered a better lot of stock.

B. B. BUCHANAN, BEDFORD CITY, VA.

Great Combination Sale

—OF—

BEEF CATTLE

—TO BE HELD AT—

Louisville, Ky., Thursday, Nov. 13, 1902

100 HEAD OF CHOICELY-BRED

SHORTHORNS, ABERDEEN-ANGUS and POLLED DURHAMS.

This is the second combination sale held under the auspices of the

Kentucky Live Stock Breeders' Association.

It has been the endeavor of the Committee to accept nothing but the choicest animals, both in breeding and individuality, and they believe that on the day of the sale prospective purchasers will find as fine a collection of beef cattle as ever went into the sale-ring south of the Ohio river.

AMONG THE CONTRIBUTORS ARE:—

SHORTHORNS—Ormsby Bros., of Lakeland, Ky.; W. F. Brockman, of Hartsville, Ind.; Geo. C. Bird, of Croppers, Ky.; L. L. Dorsey, of Anchorage, Ky.; G. Letterle & Son, of Harrod's Creek, Ky.; F. G. Hogan, of O'Bannon, Ky.; Jas. S. Ray, of Louisville, Ky.; E. R. Bagby, of Bowling Green, Ky., and J. R. Coldwell, of Horse Cave, Ky.

POLLED DURHAM—Richard Cobb, of Danville, Ky.; J. W. and B. B. Stith, of Bloomfield, Ky.; Ben. A. Stith, of Elizabethtown, Ky., and J. R. Coldwell, Horse Cave, Ky.

The **ABERDEEN-ANGUS** will be creditably represented by Otto G. Callahan, of Helena, Ky., and H. S. Weaver, of Moorefield, Ky.

Each breeder has aimed to put into this sale animals that would be creditable representatives of his herd. It is believed that the breeding and individual merit of the animals catalogued will justify this claim.

CATALOGUES NOW READY AND WILL BE MAILED UPON APPLICATION.

Address **M. W. NEAL, Sec., 514 Third St., Louisville, Ky.**

Col. R. E. EDMONSON, Kansas City, Mo., and Col. S. S. MEDDIS, Louisville, Ky., Auctioneers.

THE BEST PLAN.

There is always a best plan of life insurance for each individual; it is, however, sometimes difficult to tell which it is. The difficulty lies not so much with the present as with the future. Circumstances may unexpectedly change and create unlooked for requirements. Therefore it is essential that the policy selected be flexible and readily adaptable to possible future changes.

The new policies of the Northwestern Mutual Life Insurance Company embrace in the one contract about everything that is desirable in life insurance. The rights of both insured and beneficiary are recognized to the fullest extent possible, and the policies are easily adaptable to contingencies impossible to foresee at time of application, but which, as shown by the experience of the company, may at any time arise. They are the best, most flexible, most equitable, and most comprehensive policies issued. See advertisement on back cover.

INTERNATIONAL LIVE STOCK EXPOSITION.

UNION STOCK YARDS, CHICAGO.

NOVEMBER 29TH TO DECEMBER 6TH.

The entire entries for the Third International Live Stock Exposition are all in and General Manager Skinner is happy over the outlook. There are more entries this year than at last year's show in nearly all breeds, showing how earnestly the breeding interests of the country are undertaking to demonstrate the value of their breeds as meat producers.

Mr. Skinner said: "Having visited a great many of the show-yards this season, I am particularly pleased that about all the good things of the year are going to 'round up' here. The animals entered are the prize winners at the various fairs, and I am sure that the exhibit will make the most critical judges marvel at its excellence."

CATTLE DISHORNERS.

The practice of dishorning cattle is growing in public favor every year. About the only question that now arises is, What is the best knife for doing the job? We are very glad in this connection to call the attention of our readers to the advertisement of George Webster, which appears elsewhere in this issue.

Mr. Webster has been long and favorably known as the manufacturer of the Convex Dishorner. This year he has brought out in addition a brand new "V-Knife," which he calls the "Bully V." It is the strongest and most powerful "V-Knife" on the market. The driving-cogs on the handles are made on eccentrics, so that the greatest power is exerted at the outset when the hard surface of the horn is attacked.

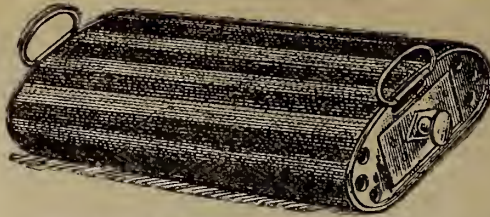
Write for his complete catalogue. Address Geo Webster, Christiana, Pa., and mention this journal.

POLAND CHINAS.

Mr. J. F. Durette, Birdwood, Va., is offering some nice Poland Chinas this month. Look up his advertisement.

"A BLESSING TO MANKIND."

Is the Expression Used by Those Who Enjoy a

Lehman
Carriage
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Sleigh
Heater

They are Simple, Safe, Practical, Effectual and Economical. Over 175,000 of our Heaters in Actual Use. No Carriage or Sleigh is Complete without One.

Sold by all Carriage, Harness and Hardware Dealers. Circular and Price List for the asking.

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ABERDEEN-ANGUS CATTLE.

—SIRES IN SERVICE—

EULALIES LADDIE 41861 assisted by BARON ROSEBERRY,
The WESTERTOWN ROSE son of GAY BLACKBIRD (the sire of Gay Lad).

Most of the leading families of the breed—Coquett. Queen Mother, Westertown Rose, Rose of Adno, Nosegay, Violets etc.,—sired by such noted bulls as Gay Blackbird, Ermoor 18171, by Royal Erie; Eulalies Erie 15568, by Heather Lad 2nd; Beau Bill 18637; Baron Ida 20184; Dark Prince 80638.

Quality combined with best of breeding, our motto.

No fancy prices, but business cattle at business prices.

Write for what you want.

A. L. FRENCH, PROPRIETOR, FITZGERALD, N. C.
Rockingham Co., 24 miles south-west of Danville, Va. on D. & W. Ry.

POLAND-
CHINAS.

TECUMSEH G, 49283.

I have a limited number of pigs by my fine boars, "TECUMSEH G," 49283, and "MONARCH," 48705, and can furnish pairs not akin or related to those previously purchased. Young boars and sows of all ages. Send to headquarters and get the best from the oldest and largest herd of Poland-Chinas in this State at one-half Western prices. Address J. B. GRAY, Fredericksburg, Va.

SEND FOR A PREMIUM LIST.

SHOW YOUR STOCK.

THE GREAT POULTRY, DOG, PIGEON AND PET STOCK SHOW,

To be held NOVEMBER 24-29, 1902,

In the MASONIC TEMPLE, - RICHMOND, VA.,

Will far surpass any show of the kind ever held in Virginia. All birds will be scored by America's most noted poultry judge, Mr. T. E. Orr, the present Sec and Treas. of the American Poultry Association, who, for 10 years past, has officiated at the largest shows everywhere. Mr. Orr will deliver a lecture during the week. Judges in other departments of equal prominence. LIBERAL CASH PREMIUMS.—On single birds, \$3 first prize. On pens, \$5 first prize. Uniform Cooping. Ground floor hall. Grand Working Exhibit of Incubators and Brooders.

THE DOG DEPARTMENT WILL BE A GREAT ATTRACTION.

PREMIUM LIST NOW READY.

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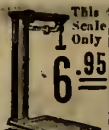
R. C. BRAUER, Supt.,
Richmond, Va.

FRANK JENKINS, Sec.,
517 W. Broad St., Richmond, Va.

\$10.45

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 Buys a 20 year guaranteed Sewing Machine, with high arm, latest improvements, choice of drop head cabinet or 7 drawer upright cabinet. Our ball bearing machines are highest grade made. Stoves \$1.00 to \$12.50 all supplied on trial without any money with order. Our Catalogue shows 15 styles, send for it.

\$3.90 for this Oak Heater. Burns wood, soft or hard coal, has heavy cast iron base, draw center grate, corrugated fire box. Nicely nickel and all the latest improvements. Our Bl. Cat. shows everything in stoves. Oak are highest grade made. Stoves \$1.00 to \$12.50 all supplied on trial without any money with order. Our Catalogue shows 15 styles, send for it.

6.95

 Weighs from 1/2 to 200 lbs; size of platform 11 3/4 x 20 3/4 in. Guaranteed To Weigh Correctly. 4 T. wagon scale \$27.00. 2 40 lb. platform scale \$11.75. Scales of all kinds.

\$2.67

 For gentles Electric Washer made of white cedar, galvanized hoops, corrugated inside. Durable and strong. Saves 1/2 the labor. 12 styles Washers \$2.05 to \$5.75. Also Wringers. Send for catalog, postage is free, but we send 15c. Write to-day.

45c

 For this double breasted lined undershirt, silk bound. A heavy warm shirt; size 34 to 48. Retail at 75c; our price, 45c. Drawers to match. 45c. 205 styles of ladies. Also cotton work shirts. Everything in shirts.

75c

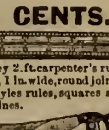
 Buys this large metal covered trunk. Gold lock, strong bolts. Also traveling bags, sizes trunks, umbrellas and telescopes. Also traveling bags, sizes trunks, umbrellas and telescopes. Our Big Catalog shows 32 styles. We have the largest assortment ever shown. Prices very low. Catalog free.

\$1.85

 Buys this large metal covered tray has covered hat box. A bargain. We have 275 styles and sizes trunks, umbrellas and telescopes. Also traveling bags, sizes trunks, umbrellas and telescopes. Our Big Catalog shows 32 styles. We have the largest assortment ever shown. Prices very low. Catalog free.

\$1.95

 buys this brace and bit set, brace bar 10 in. sweep, steel jaw, 5 warranted auger bits, sizes 1/4 to 1 in. 1 screw driver bit. 12 other sets. A complete set carpenter's tools \$2.40 to \$18.95. Our catalogue illustrates 7,500 different tools, 1,800 cuts tinware, and other hardware.

8 CENTS.

 Stanley 2 ft. carpenter's rule 4 fold, 1 in. wide, round joints 150 styles rules, squares and tape lines.

55c

 buys guaranteed ax. Wt. 3 to 6 lbs. Sixteen styles of double and single bladed axes of the latest patterns.

Send for Our Catalogue of over 400 pages, size 9x11 inches. Postage is 15c, but if you will cut this ad out and send it to us we will mail the catalog FREE.

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33 CENTS
 for 20 in. hand saw. We have complete line Dexton's saws.
45 cts. for repair kit full calf skin put up, put instanter, etc.
37c for a warranted steel claw hatchet. Wt. 1 1/4 lb. 50 styles.
26c for a 1 lb. steel hammer. Warranted. Retail at 40c. We have a good hammer at 10c.
MARVIN SMITH CO.,
 55-57-59 N. Jefferson St., CHICAGO, ILL.

WHEN EDGAR ALLAN POE RECITED "THE RAVEN."

"I became acquainted with Mr. Poe during his last visit to Richmond, in 1849, at Duncan Lodge, the home of our mutual friend, Mrs. Jane Mackenzie, and of Poe's sister, Rosalie," says Dr. John F. Carter in a paper in Lippincott's Magazine, for November, on the American poet's last night in Richmond.

"It was at Mrs. Mackenzie's that I first heard Poe recite, at her request, 'The Raven' and 'Annabel Lee,' only the family being present. From an unusually lively mood he lapped at once into a manner, expression, and tone of voice of gloomy and almost weird solemnity, gazing as if on something invisible to others, and never changing his position until the recitation was concluded. It happened that he had just before requested of Mrs. Mackenzie the loan of a sum of money, which request she was for the time unable to comply with; and she now said to him, 'Edgar, what do you think of giving a public recital of those poems? It would probably prove a financial success.' The result was that about a week later there appeared in the city papers a notice that on a certain evening the poet would give a recitation of his own two favorite poems in the Exchange concert room, tickets to be had at a certain bookstore. Over two hundred of these were printed, the charge of admission being fifty cents each.

"On the appointed evening I, then a young man of twenty-four, accompanied Mrs. Julia Mayo Cabell and another lady, both warm personal friends of Poe from his childhood, to the place of the proposed recitation. We arrived some moments after the appointed time, and, to our surprise, found, instead of a full audience, only nine persons assembled, we, together with the usher, making thirteen in number. Some time elapsed before Poe made his appearance, when he took his place on the platform, bowed, and, resting his hands on the back of a chair, recited 'The Raven' and 'Annabel Lee,' but in a mechanical sort of way, and with a total lack of the weird and gloomy expression which had given them such effect at Mrs. Mackenzie's. On concluding, he again bowed and abruptly left the platform."

"The proceeds of this experiment was six dollars, in consideration of which, Mr. Boyden, proprietor of the Exchange, would make no charge for the use of the hall, lights, and attendance."

CASTALIA HEREFORDS...

The breeding cows and herd bulls at "Castalia" have been selected with one aim; THE BEST, REGARDLESS TO COST. Herd headed by the \$3,000.00 Imported SALISBURY, assisted by LARS, JR. I have now for sale a very fine bunch of bull calves by these bulls, also a few females. Visitors are welcome and met at station. Write your needs.



MURRAY BOOCOCK, - Keswick, Va.

BACON HALL FARM.
HEREFORD REGISTERED CATTLE
 "TOP" BREEDING, CALVES NOT AKIN.
 MOTTO—Satisfaction or no Sale.
E. M. GILLET & SON, Verona, Balto. Co., Md.

C. C. Taliaferro,
 NASONS,
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 1902
 "MOUNT SHARON STOCK FARM."
 Registered HEREFORD CATTLE
 Registered SHROPSHIRE SHEEP
 Registered POLAND-CHINA PIGS.
 Reg. Old Grade BRONZE TURKEYS
 Reg. Old Grade MUSCOVY DUCKS



HEREFORD CATTLE.—Calves, entitled to registration, \$75 to \$100. Grade Calves by "81 Edward" \$25 to \$40.
SHROPSHIRE SHEEP.—Bucks, one year old and over, \$15 to \$20. Buck Lambs, July delivery, \$10, and \$12. Ewe Lambs, July delivery, \$8, and \$10.
POLAND-CHINA HOGS.—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$20.
M. BRONZE TURKEYS.—Toms, \$4. Hens, \$3. Eggs, per sitting of 12, when in season, \$4.
MUSCOVY DUCKS.—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; trios, \$3.
BARRED PLYMOUTH ROCKS.
ROUEN GESE.—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00
WILLIAM L. Jr., No. 21068, half brother of Axtell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.

THE BOY IS COMIN' HOME.

I TELL you it is busy times jest now for me and marm,
The Boy is comin' home to spend Thanksgivin' on the farm;
'Tis ten long years since he went West to mingle in its strife,
He's done first rate, and, furthermore, he's got a Western wife.
We got the letter yesterday, and marm she laid awake
Full half the night to praise the Lord and think what she must bake.
If I should feed the turkey now as she declares I must,
Why, long before Thanksgivin' he would swell all up and bust;
I've had to grind the choppin'-knife and go to choppin' mince,
And things are brewin' rich and fine and fit to feed a prince.
The Boy, he writ for chicken-pie, "With double crust," says he,
"And mixed with cream, that lovely pie you used to make for me."
He wants a big red apple from the hill-side Northern Spy,
And butternuts,—I've got 'em round the stove-pipe, brown and dry;
He wants to lay the fire himself with maple hard and sound,
And pop some corn upon the hearth when all are gathered round.
He wants the things he used to have when he was but a lad,
'Tis somewhat strange, it may be, but it makes us mighty glad;
We're both a little whiter, but our love, depend upon't,
Is jest as green and stiddy as the hills of old Vermont.
It flustered marm a bit at first about the Western wife,
What she should do for one so fine and used to city life;
But tucked between the Boy's big sheets she found a little slip,
She read it with a happy tear, a gently quivering lip:
"Dear mother," them's her very words,
"I write this on the sly,
So don't tell John, but make for him a big, big pumpkin pie;
I know it will delight him, for he still is but a boy,—
His mother's boy,—and so he fills his wife's glad heart with joy."
And so, you see, 'tis busy times jest now for me and marm,
The Boy is comin' home to spend Thanksgivin' on the farm.
—JOHN MERVIN HULL, in *November Lippincott's*.

VACCINATED.

She was a sweet young thing, and as he walked along by her side he suddenly remembered that she had been vaccinated and hastened to make inquiries. "You have been vaccinated, haven't you?" he asked. "How is your arm?" She turned to him a face that only too plainly showed that she was suffering, and replied mournfully, "Oh, it's so sore I can hardly walk on it." And then she wondered why he laughed.—L. F. S. in *November Lippincott's*.

Mention the *Southern Planter* when corresponding with advertisers.

Something New!

Branch at Atlanta, Ga.

On account of the present immense volume of our constantly increasing business, we have established a shipping depot and branch offices at 51 Decatur Street, Atlanta, Ga., thereby enabling us to give our customers in the South much quicker and better service. We therefore request that your orders be sent to our Atlanta house at the above address.

HAYNER WHISKEY goes to you direct from our own distillery, with all its original richness and flavor, and carries a UNITED STATES REGISTERED DISTILLER'S GUARANTEE of PURITY and AGE. When you buy HAYNER WHISKEY you save the enormous profits of the dealers and have our guarantee that your money will be promptly refunded if you are not perfectly satisfied with the whiskey after trying it. That's fair, isn't it?

Direct from our distillery to YOU
Saves Dealers' Profits! Prevents Adulteration!

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4 FULL \$3.20 EXPRESS
QUARTS 3— PREPAID

We will send you FOUR FULL QUART BOTTLES of HAYNER'S SEVEN-YEAR-OLD RYE for \$3.20, and we will pay the express charges. When you receive the whiskey, try it and if you don't find it all right and as good as you ever drank or can buy from anybody else at any price, send it back at our expense and your \$3.20 will go back to you by the very next mail. How could an offer be fairer? Just think it over. Shipment made in a plain sealed case, with no marks or brands to indicate contents.

Write our nearest office and do it NOW.

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DISTILLERY, TROY, O. ESTABLISHED 1866.



CHARTERED 1870.

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Designated Depository of the United States, City of Richmond and Commonwealth of Virginia.
Being the Largest Depository for Banks between Baltimore and New Orleans, this Bank offers superior facilities for direct and quick collections.

Capital Stock, \$200,000.00
Surplus and Profits, \$531,000.00

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DEDERICK'S, NEW TWO WHEEL BELT PRESS.

It is light, strong and durable, and requires but little power to operate it. Balance wheels replace trucks. Most compact and simple belt press made.

We also make Hand, Horse and Belt Power Presses. Over 150 styles to select from. Write for catalogue, full description, prices, etc.

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Is the BEST WAREHOUSE.

in Richmond, the BEST MARKET for all grades of Tobacco. It is the home of sun and air cured Tobacco and headquarters for flue-cured and shipping types. Here are located the head offices and stemmeries of all the large corporations, Regie representatives and the largest number of independent factories and buyers in the United States.

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Has the largest lighted space, insuring equal attention to every pile. Ample accommodations in every way for all our customers.

Correspondence solicited.

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BILTMORE FARMS, - BILTMORE, N. C.

Headquarters for GOLDEN LAD JERSEYS,

Also get of TREVARTH and GEN. MARIGOLD. ❁ ❁ ❁

GOLDEN LAD'S SUCCESSOR, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY-BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

SPECIALTY. Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.

BILTMORE POULTRY YARDS. ❁ ❁

SPECIALTY. Write for descriptive circular of eggs from our prize-winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

Headquarters for the best IMPORTED ENGLISH BERKSHIRES.

APPLY TO BILTMORE FARMS, BILTMORE, N. C.

HAS THIS CHILD NO RIGHTS?

WHAT A FATHER'S "RIGHTS" OVER HIS CHILD CAN DO.

A sad and pitiable scene was witnessed here last week at a preliminary trial in the court-house, in which a little white girl, eight or nine years old, was a witness. It developed in the examination that she could neither read nor write, had never been to school or to Sabbath school, had never heard a prayer offered, did not know what it was to pray, and did not know until that morning that God made her. And this here in Anderson county, with churches and free schools dotting every hillside. To our certain knowledge there are three churches and three school houses within reach of this little girl and yet she had never been in either. Would her condition have been any worse in heathendom? Is there any difference between her and a Hindoo child so far as spiritual knowledge and enlightenment are concerned? We very much doubt if there is a negro child in the country of the same age who has never been to school or to Sunday school or heard a prayer. And yet here is a little white girl almost within sight and sound of churches and schools who might have been "in darkest Africa" so far as any benefit to her is concerned. If she is reared in this way nothing but a miracle can prevent her from growing up a vicious and immoral woman. And yet we are told that the law must not interfere with the right of a father to control his children. What right has this father to control his children? What right has this father to rear his child in this way? What right has he to disregard the claims of society upon him to rear his children for useful and honorable womanhood and manhood? Has not the State a paramount right to see that he does regard the claims of society upon him? Has not the child itself some rights in the premises which the State is bound to protect it in, even from an indifferent and careless father? Has he a right to bring into the world and rear children much as an animal would? Never! We need a compulsory school law and need it badly.—*Anderson (S. C.) Mail.*

We need a compulsory school law as badly in Virginia as they do in South Carolina.—*Ed.*

HOLSTEIN BULL FOR SALE.

Thomas Fassitt & Sons are offering in another column Ury Alwina Count Paul Dekol, one of their great show bulls, for sale. He is one of the greatest Holstein-Friesian bulls now living, and any one now desiring one of the best bred bulls in the country would do well to write them at once. Messrs. Fassitt have possibly the largest herd of pure-bred Holstein-Friesian cattle south of the Mason and Dixon line.

AN ACRE'S MEASUREMENT.

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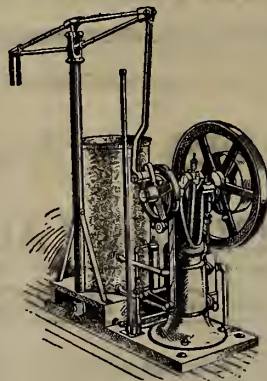
Here is an illustration:—

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A nice Parlor Suit,	-	-	17.48 (5 pieces.)
A nice Side-Board,	-	-	9.48
A Heater that will keep you warm,	-	-	1.25
A Cook Stove for	-	-	6.48

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To avoid inbreeding, we now offer the above bull for sale. Calved March 7, 1897. To those meaning business, send for pedigree, price and photo. Also 15 young bulls from 1 to 18 months, FOR SALE.

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WEST POINT.

By MARY WASHINGTON.

In celebrating the West Point Centennial in June, 1902, the fact seems to have been overlooked that the Academy made a start (though a feeble one) in 1794. As far back as 1776, Congress directed the board of war to establish a military school, but apparently both Congress and the board forgot the order, as nothing came of it. Washington advocated such a school, being strongly convinced of the great need of it. In his annual message to Congress in 1793, he strongly advised the founding of such an academy. The next year, Congress provided for creating a corps of engineers and artilleryists of 32 cadets, and ever since that time the grade of cadet has existed in our army. The Academy was actually founded that year, the cadets occupying a stone building near what is now called Trophy Point, but it was destroyed by fire two years later, and the school closed.

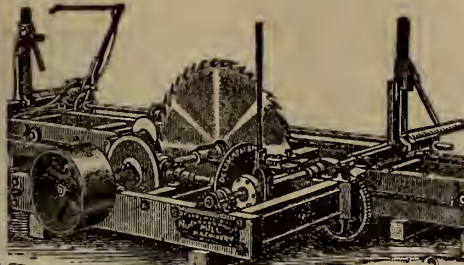
In 1798, a second regiment of artilleryists was created by Congress, and it was provided that 56 cadets should be instructed with these regiments, and that four teachers of art and science should be allowed them. In 1800, President Adams sent to Congress an elaborate scheme for a military academy which should also include the training of naval cadets. An act of Congress, approved March 16, 1802, established a corps of engineers, to consist of 7 (seven) officers and 52 cadets—these to constitute a military academy. The first academic year opened on July 4, 1802, with ten cadets. The latter were allowed then to enter between the ages of twelve and thirty-four. The curriculum was extremely narrow

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We will deliver on cars at Factory our No. 0 PONY FARMERS' SAW MILL, with DeLoach Patent Variable Friction Feed, Duplex Dogs, Improved Head Blocks and Ratched Set Works, complete as shown in cut, except has Carriage made in two four-foot sections, with Rope Drive instead of Rack and Pinion, without Saw or Belt, for

\$115.00 Spot Cash!

AWARDED FIRST PRIZE AND GOLD MEDAL, World's Fair, Chicago, 1893.

- With 36-in. Solid Saw, \$127.50; 40-in., \$132.50; 44-in., \$140.00; 48 in., \$150.00.
- With 36-in. Inserted Saw, \$147.50; 40-in., \$152.50; 44-in., \$160.00; 48-in., \$170.00.
- Best Rubber Belting, 4-ply, 6-in., 20 cents per foot; 8 in., 30 cents per foot, net case.

NO DISCOUNTS FROM THESE PRICES.

Harry Hootman, Washington, Pa., says; "The little DeLoach Mill is surely a Dandy. I cut 4,800 feet of hard oak per day with 10-h. p. A man near me bought a — mill and only cuts 1,500 feet a day with 20-h. p. This shows that your mills are surely ahead of the rest."

OUR GUARANTEE:—The Mill is warranted to be made in workman-like manner, of first-class material throughout, and to give perfect satisfaction if operated according to our printed instructions, which are so simple that a boy can understand them. ANY ONE WITH ORDINARY INTELLIGENCE CAN SET AND OPERATE THIS MILL without the assistance of an experienced sawyer or mill man. The Mill will easily cut 2,000 to 2,500 feet of first-class lumber per day with only FOUR-HORSE POWER; 3,000 to 3,500 feet with 6-horse power; 4,000 to 5,000 feet with 8-horse power, etc., and is adapted to any kind or size power up to 15-horse power. IF INTERESTED, write for large illustrated catalogue of DELOACH Patent Saw Mills to suit any power, from 4 to 200-h. p.; Shingle Mill, Machinery, Drag Saws, Planers, Edgers, Trimmers, Stave and Lath Mills, Bolters, Corn and Buhr Mills, Water Wheels, Shafting, Pulleys, Gearing, etc. (Be sure to say you saw our ad. in this paper.)

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P. S. Crowley, Quitman, Pa., says: "The DeLoach Variable Friction Feed is perfection. When I need another saw mill I want the DeLoach every time."



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and limited, a knowledge of decimals and vulgar fractions being all the mathematical lore required. In the winter, the scholars took recess.

The academy struggled on feebly till the War of 1812, when our Government was made to realize its great need of trained soldiers. Indeed, Washington felt this need even during the Revolutionary War, he having had to get men of European birth and training for his field engineers. With war at their doors, Congress hastily passed an act in 1812, reorganizing the military academy on principles which have, in the main, been followed ever since. The number of cadets was fixed at 250, and the number of Professors increased. The standard of scholastic requirements was also considerably raised, though it still fell far short of what it now is. Thus the academy, planned and advocated by Washington, seconded by Adams, and actually established by Jefferson, became firmly rooted under the administration of Madison.

Major Sylvanus Thayer, one of the earliest graduates of West Point, was made superintendent in 1817, and retained that position sixteen years. His services were of inestimable value, and he was called "The Father of the Military Academy." A statue has been erected to him on the grounds, and the beautiful "Thayer Memorial Hall" affords another proof of the gratitude and reverence that attach themselves to his memory. "Honor," "obedience," and "efficiency," were made the watchwords during his administration, during which were formed the men who led our columns to victory in the Mexican war. Even now his influence is potently felt, and his memory warmly cherished.

In 1852, Gen. (then Col.) Robt. E. Lee, became superintendent at West Point, and discharged his duties with the faithfulness and efficiency he always showed in his work. He strongly advocated enlarging the scope of instruction, and his efforts resulted in procuring a five-years' course. Since that time, however, it has been shortened to four years. At the breaking out of the Civil War, there were 85 Southern Cadets at West Point, but they all resigned and returned home except twenty-one.

The West Point reservation includes 2,336 acres, and about 160 buildings, with a population of about 1,600. There is also a very large floating population in summer, when the "yearling" Cadets and those of three years' standing are generally visited by their mothers, sisters or other relatives, to say nothing of numerous outsiders who are attracted to West Point by the beauty of the scenery and by the many delightful and interesting features of summer life there. I saw no sweeter sight there than the mothers, strolling over the grounds with their stalwart, soldierly young sons, on whom they gazed with rapt tenderness and pride, as if they discerned an incipient Stonewall Jackson or Robert E. Lee in the young fellow. And how dutiful and attentive these Cadet sons are! Carrying their mothers to the open air concerts and hops which take place on alternate nights throughout the summer, frequently ignoring the fairest young girls for the sake of their mothers. I have heard the lat-

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- BUCKWHEAT.
- OATS and
- CANE SEED.

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ter begging their boys to go off and dance with the young people, and they would reply "But, mother, it is a great deal more pleasure to be with you."

In the many beautiful strolls and works of West Point, you often see a couple whom you imagine to be lovers of the most sentimental kind, but when you approach them closely, you find them to be mother and son. It is certainly a beautiful and cheering phase of human nature, and it is pleasant to see that absence from home and the treadmill of a military life do not dull the sweetest sentiment of a boy's nature. My remarks may have suggested the idea that the young girls are neglected at West Point, but such is not the case. They always have an abundance of partners and attention, as there are two classes (aggregating nearly 250 cadets) available for this purpose, and probably not more than forty or fifty of them at a time have their mothers visiting them. The cadets who have been at West Point two years go home on furlough, and the "Plebes" or new cadets are not allowed to take part in any social function; hence, in the summer vacation, the third and first class alone represent West Point society, and they do so with great credit both to themselves and the Academy, for they have a fine bearing and polished address, and are beautiful dancers.

One of the most interesting figures now at West Point is Calvin Titus, a young fellow from Illinois, who was bugler of the Fourteenth U. S. Infantry

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Best Family Flour, bbl.....	\$4 25	bottle.....	85
Granulated Sugar.....	4½	\$9 00 per dozen.	
Rock Candy Syrup, gallon.....	40	Juniper Gin, for kidney and bladder troubles. Cures weak and lame back, per gallon.....	2 00
Something fine, regular price, 50 cents.		Old Northampton Apple Brandy, per gallon.....	2 00
Pure Lard, any quantity.....	12	Clemmer Whiskey, per gallon.....	2 00
2,000 bushels Clover Seed.....	2 90	Will sell any quantity of these medicines at same price.	
10,000 bushels Choice Seed Wheat.....		New Large, Fat Mackerel in 15-lb. buckets.....	98
40,000 bushels Winter Seed Oats.....		The regular price is \$1.50, we are overstocked and want to move them.	
Arbuckle's Coffee.....	11	New Prunes.....	5
Golden Rio Coffee.....	10	Octagon Soap, 100 cakes.....	4 00
Country Cured Side Bacon.....	12½	Finest English Breakfast Tea.....	45
10,000 bales Choice Timothy Hay.....	70	Carolina Rice.....	6
New Cut Herrings, dozen.....	12	Home-Made Blackberry Brandy, per gal., including jug..	75
McDermott's Fine Malt Whiskey, sure cure for chills and fever, loss of appetite, dyspepsia, consumption, sleeplessness, enriches the blood and builds up the system. No family should be without a			

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during the war with China, and who was the first man of the allied forces to scale the walls of Peking. For this daring act (equal to any of the feats of Roland or other knights of chivalry), Congress ordered a medal of honor struck off for him, which the President presented to him and pinned on his coat at the West Point Centennial Celebration in June. Also the President gave him, the previous year, an appointment to West Point in recognition of his distinguished valor. He is modest and unassuming, and of a religious turn of mind.

A QUESTION OF SEX.

A bright little Washington girl, four years old, who is a descendant of Gobrecht, the veteran journalist of a decade ago, shows a decided ability to think and decide for herself quite up to the standard of her brainy ancestor.

She was repeating her prayers at bedtime recently, the Lord's Prayer first, and as is her habit, winding up with a petition for blessings on the various members of the family of both sexes. But this time, when she came to the conclusion, she hesitated a moment as a new idea struck her, and then in a most devout tone added—

"Amen and a-women!"

"Why, daughter, you must not say that! What did you say 'a-women' for?" asked her mother in surprise.

"Well," replied the young philosopher, "didn't I pray for women as well as men?"—MARGARET SULLIVAN BURKE, in *November Lippincott's*.

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1902. IN THE STUD 1902.

KELLY, 22283. Record, 2:27.

Bay Horse; Foaled 1889.

(See American Trotting Registry, Vol. XV.)

Sired by Electioneer 125. First dam, Esther, dam of Express 3, 2:12½; Express, 2:21, etc.; by Express. Second dam, Coliseum, by Colossus.

(For further extension of pedigree, see Stud Book.)

NOTE—Kelly is not only richly bred, but he represents the highest type of a trotter, having grand size and the form and finish of a thoroughbred. He is the sire of McChesney, 2:16½.

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RED LEO, 28028. Record, 2:26½.

(See American Trotting Registry, Vol. XIV.)

Sired by Red Wilkes, 1749, the greatest living sire; Dam Dictator Girl, by Dictator.†

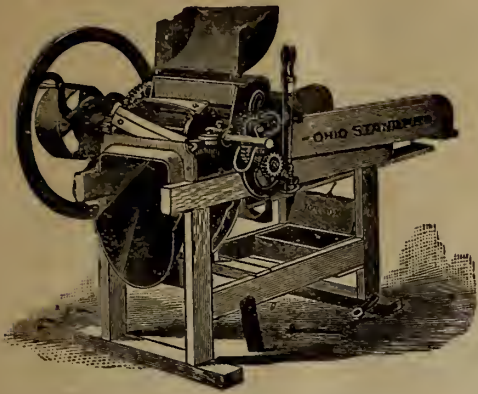
NOTE—Red Leo is a richly-colored, bay horse of fine size and substance. He comes from a great line of performers and producers. Ella Leo, 2:20½; Cassie Leo, 2:23½, and other winners are by him.

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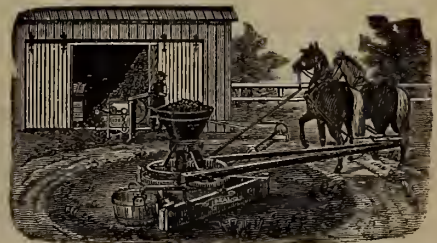
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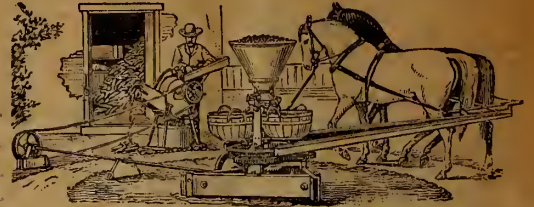
LITTLE GIANT CORN SHELLER.

The frame is made of thoroughly dry hard wood. The joints mortised, tenoned and bolted. The bearing logs are bolted on to the frame instead of screwed. The iron work is made from the very best material.

Every piece is carefully inspected before being put on. This machine is high-grade all the way through. It is handsomely painted, striped and varnished.



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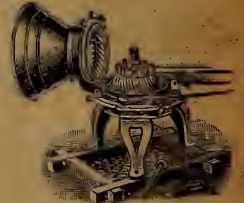
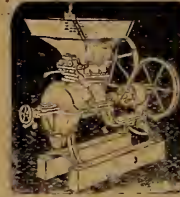
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Are unequalled for grinding ear Corn, hucks on or off, Corn, Oats, Wheat and all other grains, single or mixed.

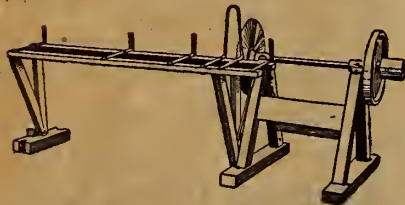


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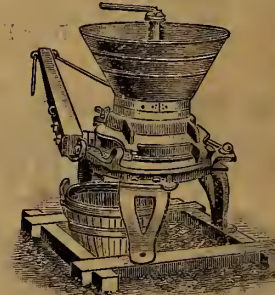


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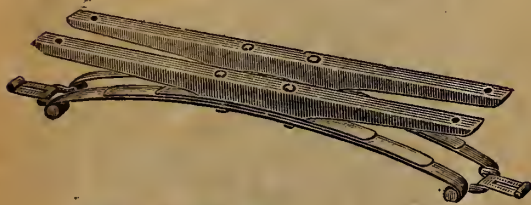


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